



A MONTHLY JOURNAL DEVOTED TO THE ELEVATOR AND GRAIN INTERESTS.

PUBLISHED BY
MITCHELL BROS. COMPANY,
(INCORPORATED.)

Vol. X.

CHICAGO, ILLINOIS, AUGUST 15, 1891.

No. 2.

SUBSCRIPTION PRICE,
ONE DOLLAR PER ANNUM.

OAT CLIPPING—A CORRECTION.

In the article on "Oat Clipping," on page 5 of our July issue, the compositor made us erroneously state that "By the clipping process the weight of oats can be raised from two to three pounds to the measured bushel." It should have been from two to ten pounds.

THE CHASE TRANSFER ELEVATOR.

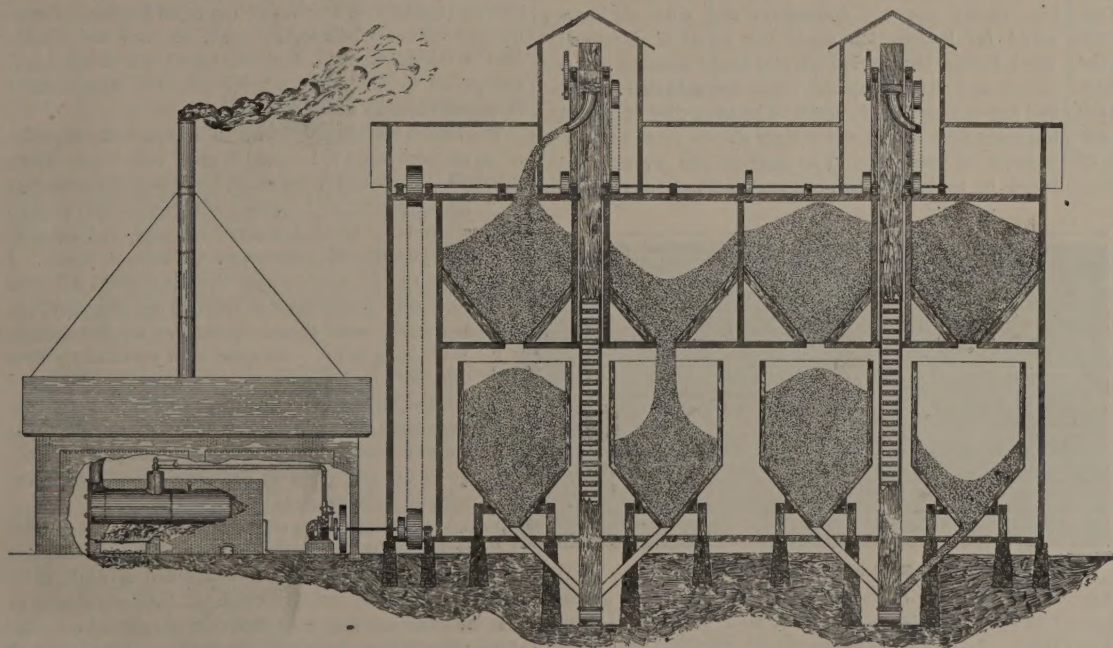
Great improvements have been made in all kinds of elevators during the past few years, but more attention

for an amount two or three hundred pounds less than that actually delivered, as is the case when delivered at the storage elevator. A good grain transfer house soon pays for itself by increasing the earnings of the road erecting it.

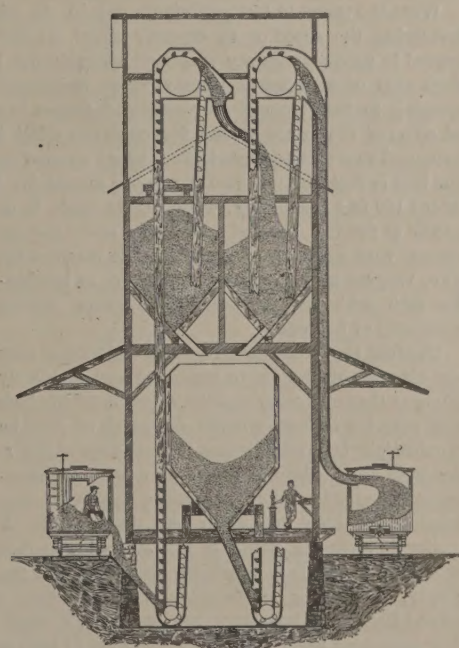
The grain transfer elevator illustrated herewith has been erected for the New York, Chicago & St. Louis Railroad Company in the Stony Island yards at Chicago. The house has a capacity of 100 cars per day. The largest number transferred in a day is 104. On a test run it transferred 14 cars of grain in 49 minutes. The house is 80x24 feet and 50 feet to top of tower. It contains eight steel-lined garnerers of 2,000 bushels' capacity

shovels, and on each side of the house is a steam car puller that can switch 30 cars at a time. The grain runs out of the shipping legs, which are equipped with bifurcated spouts, with such force as to carry it to the ends of the car, thus placing the bulk of the load over the wheels. No grain is wet during stormy weather while being transferred, as wooden awnings project beyond outside of car far enough to prevent rain falling upon the roof of car.

The brick engine and boiler room is detached from the main building, so the dust is easily kept out and the fire risk diminished. A 75-horse power Buckeye Engine fur-



SECTIONAL SIDE AND END VIEWS OF THE CHASE TRANSFER ELEVATOR.



has been given to improving transfer and cleaning elevators than to other kinds. The transfer elevator is coming more and more into use, and we hope that the time is not far distant when every railroad company will have transfer houses at its terminals and at points where it connects with other lines.

The erection of transfer houses at such points is equally advantageous to the shipper, the buyer and the carrier. The shipper loses no grain by dockage for future shrinkage, as is the case when the grain is transferred through a storage elevator, and the identical grain shipped is delivered at destination to buyer or receiver. It is advantageous to the carrier in that it is enabled to get greater use of its cars, blockades do not often occur, and the railroad company receives pay for all the grain carried, not

each, and four steel-lined Fairbanks Hopper Scales of 60,000 pounds' capacity. The scale timbers rest directly upon stone foundations, and the weights are absolutely correct. The slant of the bottoms of garnerers and hoppers is 50 degrees, and the opening of the garnerers is two feet square, so that no grain remains to be mixed with the next carload.

The house has two receiving and two shipping elevators, each tower having one of each. The grain is elevated 64 feet. On a belt 26 inches wide two cups 12x7 inches are placed side by side, giving a capacity equal to an elevator equipped with cups 24x7 inches. The object in using two 12-inch cups instead of one 24-inch is that the hug of the belt is increased and cost of replacing broken cups is decreased. At each receiving sink is a set of power

weighs the power. When not very busy only six men in addition to the two weighmen are required to operate the house—a foreman, engineer, two shovellers and unloaders and two men to load and fasten shut the cars. Each weighman—one representing the Chicago Board of Trade and the other the railroad company—weigh every carload and take a record of the weight. As they can easily pass from one side of the elevator to the other, they make no mistakes in recording the number of each car and the grain put into it, so an Eastern buyer does not receive oats instead of corn.

The elevator was erected by the old, well-known firm of grain elevator architects and builders of Chicago—the Chase Elevator Company, which is composed of Henry I. Chase, P. F. Chase and H. G. Chase.

IRON BRICK, AND STEEL SHUTTERS.

The quantity of sheet-iron used in the construction of buildings is continually increasing. Twenty-five years ago very little sheet-iron was used for roofing or other building purposes, while five years ago over 50,000 tons of sheet-iron were used in the United States alone. It is cheap and durable, and its use is being increased by the introduction of new forms and new products.

One of the new forms introduced by the Garry Iron and Steel Roofing Company of Cleveland, O., called the sheet-steel pressed brick, is illustrated herewith. The cut shows the iron as shipped ready for application. It is an entirely new device in sheet iron or steel building material. The makers are confident that builders, architects, contractors and property owners will see the advantage of this pattern in sheet iron or steel for outside covering on buildings of all kinds in preference to the old style "flat" and "corrugated" iron. This new form has the perfect appearance of the finest brick made.

It can be applied by any mechanic; no waste; lies perfectly smooth, and after painting cannot be distinguished from Philadelphia pressed brick. It costs nearly four-fifths less than common brick.

Elevators that are near other buildings should be provided with fireproof doors and shutters, and the boiler room, if adjoining main building, should always be shut off by fireproof door. The cut given herewith illustrates the boiler plate shutter made by this company. They are made with arched tops when desired, and of any size. The company has a shutter made of wood, covered with fireproof cement and encased in beaded sheet iron or steel. The makers claim that the wood gives stiffness and prevents warping in case of fire and the cement the radiation of heat. It cannot fire the window casings, as those made entirely of iron. Neither will it warp by heat or admit of flames. A double corrugated shutter is also made and gives satisfaction. The shutters are well made, with strong hinges and fasteners, so that burglars cannot enter building supplied with them.

SPEED OF ELEVATOR.

BY R. JAMES ABERNATHEY.

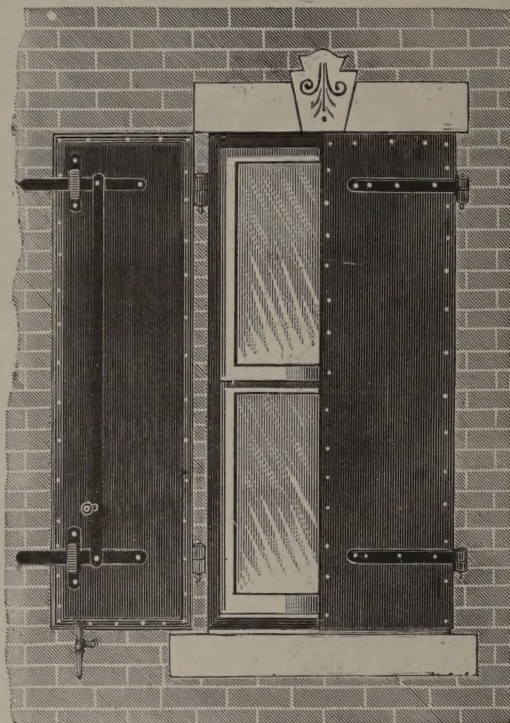
What the travel in feet per minute has to do with determining the speed of an elevator stand, no man well posted in such matters can very well understand. In the dark ages of mechanical history when mechanics were groping in the gloom of surrounding darkness in search of some of the minor causes for observed effect it was supposed that elevator speeds were based on the travel of the belt in feet, the standard for some mechanics being about 190 feet per minute, while others made it as much as 220 feet, those figures being about the extremes with standards all along the line between the two, varying with the views of the various mechanics, each with his satellites, or followers, having standards of his own.

For fear that some modern elevator builders may get alarmed at the above statement and recklessly jump at the conclusion that the writer is off his base and roaming in fancy's realm in search of facts he would right here remark that in those days of ignorant bliss, the modern grain elevator, with its enormous capacity for quickly handling trainloads and boatloads of grain, had never been dreamed of. A pulley 60 inches in diameter and 30 inches in face would have been an appalling apparition to the steady, slow-going millwrights of that age. About 18 and 20-inch pulleys were the standard, though there may have been some daring enough to use 24 inch pulleys on exceptional occasions or for special purposes. Such, however, were evidently few and far between.

Oliver Evans, the father of the elevator, recommended 24-inch pulleys for handling grain with a speed of twenty-five revolutions per minute, which could be increased to secure additional lifting capacity, "but not to above 35 revolutions in a minute." Just think of it. Some three-quarters of a century after that advice was given, the writer constructed three stands in one of the great Western elevators with 24-inch pulleys to run seventy-two times around in a minute. But he wants it here distinctly understood that no such speed is here recommended. It is too fast; handles grain too lively for even a fast Western grain elevator establishment, but more about speeds later. Of the "meal elevator" or such as is used in the flour and other meal mills Oliver Evans

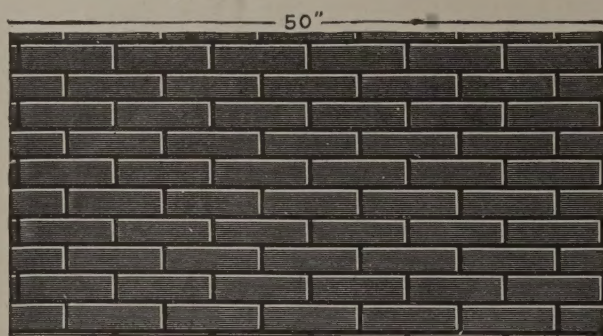
said: "Make the pulleys 3½ inches thick and 18 inches diameter. Give them no more than twenty revolutions in a minute." Evans was steady, slow-going and conservative and while he fully appreciated the usefulness and great value of the elevator he seems to have failed to recognize the laws controlling the motions of the same.

As time went on, however, his followers, while less enlightened as general mechanics, discovered by actual observation and experience, that his motion was too slow and raised the standards by reckoning in feet travel instead of revolutions of head pulleys as above stated, having learned less about the controlling laws than Evans knew, although excelling him a little in practical results,



THE BOILER PLATE SHUTTER.

that is, in making the elevators do more work. But the true theory was not understood and when the learner asked for information about the speed of elevators he was informed that the belt should travel so many feet per minute and on that basis he made his calculations if he had any calculations to make. The absurdity of calculating upon such a basis was plainly shown by the writer a number of years ago. The position was strongly combated by those who live, but learn nothing, and, indeed,



THE SHEET STEEL PRESSED BRICK.

the whole line of mechanics of that class were aroused and up in arms in sentiment at least, if not in open hostility. And some are evidently not fully convinced even to this day.

However, some of them learned in this way: Larger stands had to be made than of yore, and 60-inch pulleys and 225 feet per minute was the maximum speed, and so 60-inch pulley elevators were, presumably, given that belt speed or say fifteen revolutions for the upper pulley. It does not require a very vivid imagination to picture in fancy colors the plight of the poor mechanical wight trying to make a 60-inch pulley elevator work in a satisfactory or any other kind of a way running at fifteen revolutions per minute. Such experiences are eye openers and calculated to make an otherwise live mechanic curse the stupidity of his ancestors and teachers. He abandons the old theory and speeds up until he gets the thing doing some kind of work and then he takes time to learn the true theory and in that way very gradual progress has

been made. Still there appears to be some who cling to the antiquated idea, if not as a whole, at least in part, and very needlessly, not to say foolishly, reckon that a belt on a pulley of a given size must travel a given number of feet.

The law of centrifugal force controls the discharge of all perpendicular elevators. Those that slant and pitch well forward at the top will discharge by gravity without the aid of centrifugal force and hence the basis on which Oliver Evans worked, as all elevators were then slanted more or less. To know something about the speed of elevators we must know something about the law of centrifugal force which gives to the head pulley of a stand of elevators a discharging force in proportion to its diameter, the number of revolutions being the same all the time. To be explicit, a 48-inch pulley will possess just twice the centrifugal force of a 24-inch pulley when both make the same number of turns in a given time, say forty revolutions per minute. As a good working elevator throws the grain out of the cups directly after they pass the top center it will be readily understood that a 48 inch pulley requires double the force of a 24-inch pulley to free itself because it has twice the distance to throw it in order to clear pulley and buckets, so that so far as that much of the operation is concerned the speed of both pulleys should be the same as in practice, the travel of the belt having nothing to do with it in either case, the one traveling just twice as fast as the other. What apparent nonsense it is then to make any reckoning on the feet speed of the belt.

Another fact in relation to centrifugal force must be made known in order to prevent those who want to speculate in speeds from getting into trouble. For instance, a 24 inch pulley at seventy-two revolutions per minute will have a centrifugal discharging force just four times as great as would the same pulley making thirty six revolutions per minute. Doubling the speed increases the force four times, or the centrifugal force is as the square of the revolutions. The reader will by this readily understand why I do not recommend a speed of seventy-two revolutions for elevator pulleys of 24 inches diameter, although having built and operated them at that speed. The mechanic will understand that while fixed, or what may be called standard, speeds may be deviated from it will not be safe to increase speed too rapidly or to get too far above a standard on account of the rapid increase of centrifugal force. While forty revolutions may be considered a fair average standard that speed can be much exceeded up to forty-five to fifty without detriment, if increased capacity be an object.

The easiest and cheapest way to increase the capacity of an elevator stand is to speed it up if not already up to the limit. Corn and cobs must, however, be considered an exception, and I would not recommend a speed above forty for that class of material, and possibly thirty-eight will come nearer the correct figure. I have run 24 inch pulleys elevating corn and cobs forty-five revolutions in order to get capacity, but have not found it entirely satisfactory as to work. With loose grain, wheat and corn particularly, it is different; high speeds can be obtained and good work is the result if the discharge is properly constructed. It should be low down at or about the bottom level of the pulley and abundance of room given for the grain to get away from the pulley without striking obstacles.

If the front board of the elevator head is too close to the pulley the grain will strike it, rebound and drop down the leg, when the speed is high, so in such cases the head must be extended further forward so that the grain can take a natural curved course to the discharge opening without striking the front board, and it will then discharge as freely as at any other speed. It must also be remembered that as pulleys decrease in size down to the very small wheels sometimes used for certain purposes an additional increase in speed becomes necessary for the reason that in addition to having force enough to clear the pulley there must also be force enough to clear the mouth of the down leg to prevent carrying back.

It will be quite evident that when running very small, say 12-inch, pulleys at the same speed as 36 inch pulleys the centrifugal force is decreased much more than the size of the openings of the down legs. Relatively more force is therefore required to make the small pulley discharge well, and it should on that account have greater speed to enable it to throw the grain over and beyond the mouth of the leg.

While perhaps few serious mistakes would be made in

following the speeds as generally laid down, still every mechanic is all the more master of the situation when he understands the natural laws controlling mechanical movements as when, by oversight or otherwise, he gets into trouble he can the more easily extricate himself.

OPPOSED TO ELEVATOR MEN.

Advices from Topeka, Kan., state that owing to the demands made by shippers through the railroad commissioners for cars, with elevators and track loaders being represented, the board issued the following circular, which was sent to all the railroad companies:

CIRCULAR NO. 5.

"In view of the present flattering prospect for abundant crops of farm produce in Kansas, and as a means to avoid the possibility of a shortage in transportation facilities, the commission desires to respectfully impress upon you the importance of a thorough and uniform system for the apportionment and distribution of cars among the several stations and shippers along the line of your road. As a means to this end, we beg leave to submit the following suggestions, and ask if they meet with your approval, that instructions be issued to your agents accordingly, viz.:

"First.—Agents should be instructed to require of shippers an estimate of the number and kind of cars they will likely use per month during the shipping season. Said estimate to be signed by the shipper or his authorized agent, but this is not to be regarded as a requisition for cars for any specific day or date.

"Second.—Requisitions for cars to be entered in a book of record in the order in which they are received.

"Third.—Cars to be applied in the order in which requisitions are filed.

"Fourth.—When requisitions exceed the number of cars available at the time shipments are to be made, cars on hand to be apportioned impartially between the several patrons of the station, except that the agents are forbidden to give any shipper more than double the number of cars he has loaded on any previous day.

"Fifth.—When a requisition is filed, shipper must be notified that any cars furnished and not loaded at the expiration of the time for loading, will be applied on the requisition next in order, and his original order considered canceled and another made necessary.

"Sixth.—Cars should be classified as to kind and destination.

"Seventh.—A demurrage charge should be rigidly collected when cars are held an unreasonable time for loading."

In response to this circular a letter was received from the general manager of one of the lines asking for a modification in favor of the elevators, plainly asserting that the railway companies found it to their interest to discriminate in favor of elevators which used so many more cars. In response the following letter was written by the board, a copy of which was sent to each general manager:

"Your letter of the 22d ult., in relation to circular of the commission relating to the distribution of cars to shippers, has had careful consideration, and I am directed to make answer thereto as follows.

"The commission is not unmindful of the question of relative rights, raised by you, as between shippers of grain by men who own elevators, and whose sole business it is to ship grain, as dealers and commission operators, and producers or transient dealers, who desire to load directly upon cars from wagons.

"This question of the relative rights of 'shippers having elevators and storage facilities' and 'shippers who may order cars for temporary grain business of a few days or a few months,' is no new one to the commission. It has risen to torment the commission as often and as much as it has the railroad managers of Kansas.

"Complaints are constantly coming to the commission that such discriminations are made, by all our companies, in favor of the elevator owners, and redress demanded. To these charges the companies have always responded in an emphatic denial.

"It may as well be stated that no manager or subordinate officer has ever before admitted to the commission the practice, much less undertook to defend it. To your frankness in admitting and defending such practice is due an equal candid response from the commission.

"The rules suggested, then, are held to be strictly equitable because they do not recognize in any way shippers having elevators or storage facilities as having any rights greater than shippers who may order cars for temporary grain business, whereas you hold that they are inequitable for this very reason.

"The commission reads the statute and construes the law governing carrying companies in this state as forbidding favoritism or discrimination of any nature. You make a carload the maximum unit of quantity and affix to it the minimum charge. It matters not whether one of these units are presented by the producer, or twenty of them by middlemen; whether the one offers a carload of any given commodity three times during a year, or the other offers it 300 times during a year, the rights of each are the same, and must be respected alike both as to facilities and charges.

"In urging the necessity for this discrimination you say: 'I fear, unless this is done, that it will discourage the owners of elevator property, that decided harm may

be done in the long run to all interested, including the farming community.'

"Admitting your fears to be well grounded in reason, the commission still believes the evils following a strict adherence to the law, in an absolutely indiscriminating service of the public by carrying companies, would be greatly less than from the practice you advocate, which leads to discontent and popular distrust.

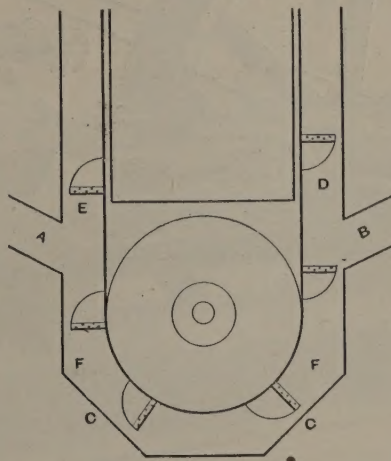
"With or without reason, the fact will remain that elevators thus cherished and sustained are believed to be monopolies in a mastery of avenues to the market from the farmer. It will be suggested, and believed, too, that railroad owners and railroad managers are in interest with the elevator owners, sharing profits magnified by favoritism in rates as well as in facilities.

"I am instructed to say, in answer to your question: 'Will you be kind enough to advise me whether you think it desirable to modify your rules in some way to cover the difficulty suggested above,' that it is not only not 'desirable,' but impossible, for the commission to modify a rule which is based upon justice and demanded by law, and to express a hope that, so far as railway corporations in Kansas are concerned, no just cause for complaint or criticism in this regard will be found to exist in the future."

About four years ago the board was compelled to take up this subject, then rendering a decision in conformity with the rules above presented. The question was raised by "track loaders," men who made requisition for cars, and then used them as warehouses until they could purchase a full load. Sometimes the cars were held a week, especially in bad weather, while demands were coming up from all parts of the state from shippers. The board then decided that a demurrage should be charged when the cars were held over the second day.

SPOUTING TO ELEVATORS.

Perhaps in no one particular are so many mistakes made as in spouting the material to elevators. In the accom-



panying sketch let C represent the boot of an ordinary elevator, while E represents the descending and D the ascending leg. By reference to the sketch it will be seen that if the material to be elevated is spouted into the boot at the point A the material must be drawn by the cups through the boot to the opposite side before it can start on its upward journey. If, on the other hand, the material is spouted in at B, the ascending cups meet the incoming stream and start it directly upward. In the first named instance the boot will fill up and the cups will be obliged to wallow in packed material toward the points F, F, or nearly one-half the distance around the pulley. In the other instance the cups are constantly meeting the stream, thus keeping it from packing in the boot. In the case of an elevator carrying grain or any coarse stock and fed as in the first instance, the letting loose of a choke from above will certainly choke the elevator, as the cups cannot wallow through the boot with an overload, while if the elevator receives its feed properly, as in the second instance, it is next to impossible to choke it. The cups meeting the heavy stream of a loosened choke at point B, would fill full and whip the surplus back up the spout, partially stopping the flow and letting the surplus out gradually until the stream has resumed its normal flow. Millwrights should guard against this fault as much as possible, for besides the annoyance of an improperly fed elevator, the additional consumption of power would be no small item.—*Modern Miller*.

The statistical committee on the New York Hop Dealers' Exchange report that 6,791 hop growers in 34 counties in New York state report 36,009 acres sown to hops this year, promising 90,040 bales of hops.

CINCINNATI RECEIVERS DECLARE AGAINST THE IRREGULAR BUYER.

The Receivers' and Shippers' Association held another meeting in the reading room of the Chamber of Commerce yesterday, at which there was a large attendance. President Wm. Harvey was in the chair, and Charles S. Maguire was called upon as secretary pro tem. The latter gentleman called the attention of the association to an article in the last number of the *AMERICAN ELEVATOR AND GRAIN TRADE*, published at Chicago, in which the claim is made that country elevator men and regular grain dealers are deprived of much business every year during the busy period by transient buyers, known to the legitimate trade as "scalpers," who float about the country, buying here and there, and through certain unmercantile methods injure the members of the grain trade, at whose doors are laid the blame for many unscrupulous tricks, such as loading direct from wagon to car, shipping the good grain with the bad, and detaining the cars as long as possible. This trade journal calls upon the country and city grain dealers to organize, and requests the various Grain Receivers' Associations at the different grain centers to buy only of regular responsible dealers. In this manner the business of these scalpers can be greatly reduced. After some discussion, in which many cases were cited tending to show the injuries these scalpers were doing to regular receivers and shippers, the following resolutions were adopted:

"Resolved, That the custom of grain dealers at regular markets sending buyers through the country to buy grain direct from farmers, is illegitimate, and not countenanced by this association, as it is an injustice to the country buyer.

"Resolved, That the members of this association will not buy from farmers, and will use their influence to prevent other dealers from so doing."—*Cincinnati Commercial Gazette*, July 22.

VESSELMEN MUST PAY FOR SHORTAGES.

Vesselmen do not relish a decision just rendered by the Court of Appeals of the state of New York. In the fall of 1889 the steamer R. R. Rhodes fell short 820 bushels on a wheat cargo from Duluth. The shortage was charged to her, and her owners sued to recover it. The case was tried before the Superior Court at Buffalo, and a verdict given for defendant. Plaintiff carried it into the Supreme Court, which affirmed the verdict. Then it was appealed to the highest court in the state and again the verdict against the vessel has been affirmed. This is the first time a shortage case has been decided by the Court of Appeals.

It is a well-known fact, says the *United States Miller*, that grain in transit absorbs moisture to a more or less extent, depending, presumably, on the state of the weather, and consequently, should, at its destination, exceed in weight what it was on being received aboard a vessel. The deduction therefore is, that in case of shortage at point of delivery, either an error was made in weighing from elevator to the vessel at point of shipment, or a similar error in transferring from vessel to elevator at point of delivery, or that short weight was given at either point from some cause, intentional or otherwise. It is not reasonable to infer that any quantity of grain could be abstracted from a vessel's cargo while in transit, and shortage could not occur from leakage, as it possibly might from cars, and we can conceive of no other cause than that stated. The shortage in this case was very large and we are informed that shortage of any amount is quite unusual, the result, generally, being an overplus of small amounts, as it, undoubtedly, in the nature of things should be, in which case the vessel owners profit thereby. Such being the case, that is, if vessel owners receive the benefit of whatever the surplus amounts to, they should certainly be required to furnish the full amount called for by the bill of lading, and to that end should by proper means insure to themselves a correct weighing at both receiving and discharging points.

A Chicago house with an order for 50,000 bushels cash wheat, sent word to country customers to hurry their wheat to Chicago to fill his order. Not a farmer responded to his call. While there may be no alliance influence in this, there appears to be a good deal of holding back on individual account for higher prices.

MISSOURI'S INCOMPETENT GRAIN INSPECTORS.

To the average habitue of the Exchange it has seemed queer, says the St. Louis correspondent of the *Northwestern Miller*, that such a small amount of "kicking" has been heard since the advent of the new crop. An object lesson was furnished a few days ago, when C. F. Orthwein, in his emphatic German way, lit into Prof. Washington, the state supervisor of grain inspection. An in and out inspection is obligatory, and 50 cents per 1,000 bushels is charged Mr. Exporter for inspection "out." Since the adoption of state inspection our grain men, even of the same political faith as the state's appointees, have shown their ultra confidence in political inspection by employing experts to watch the state inspectors. It is well for Orthwein Bros. and the good name of St. Louis that they did. Loading a barge at Central B, Orthwein's man found a new bin tendered him that he declined to accept, and examining it thoroughly he brought a sample to his employers, who submitted it for inspection on 'Change. It was plentifully sprinkled with bleached and blighted grains, and had it been dry should not have gone to exceed No. 3, but in its damp condition No. 4 was an outside rating for it. There was a good deal of emphatic talk on the floor about the matter, as the exports of wheat are at the moment nearly all to France, and a "hot" cargo or two might give a death blow to France's dealings in St. Louis wheat, a business which it has taken so many years to build up. Inspector Washington took the matter very nonchalantly, and declined to submit it to the board of appeals, claiming that as Orthwein's inspector had declined to receive the wheat, there was nothing to refer to the committee. He claimed that as a "state officer" it was his high and mighty privilege to load any sort of stuff out of the elevator into the barge, and when mixed therein the average would be No. 2, and till then they had no right of appeal. It is fortunate that Orthwein's people had some one on the wa'ch. Had the bin-full of which sample was shown been hidden away in the middle of the cargo, the whole barge load would have been red-hot before it reached New Orleans, and its transfer there to the ocean steamer would have tainted her full cargo, and done probably an irretrievable damage to the St. Louis wheat market. The upshot was that the barge was withdrawn from that elevator and her loading completed at another. President Samuel says truly that under the state law his hands are tied and that his elevators must accept anything that is classified by the state inspectors. Necessarily they endeavor to prevent mixing the sheep with the goats. They can't, even if they were willing to, dump poor stuff on the millers or single car shippers, so the exporters' 50,000 barge cargo is the only place to hide it, and the private inspector preventing that, the question is, what will they do with the stuff?

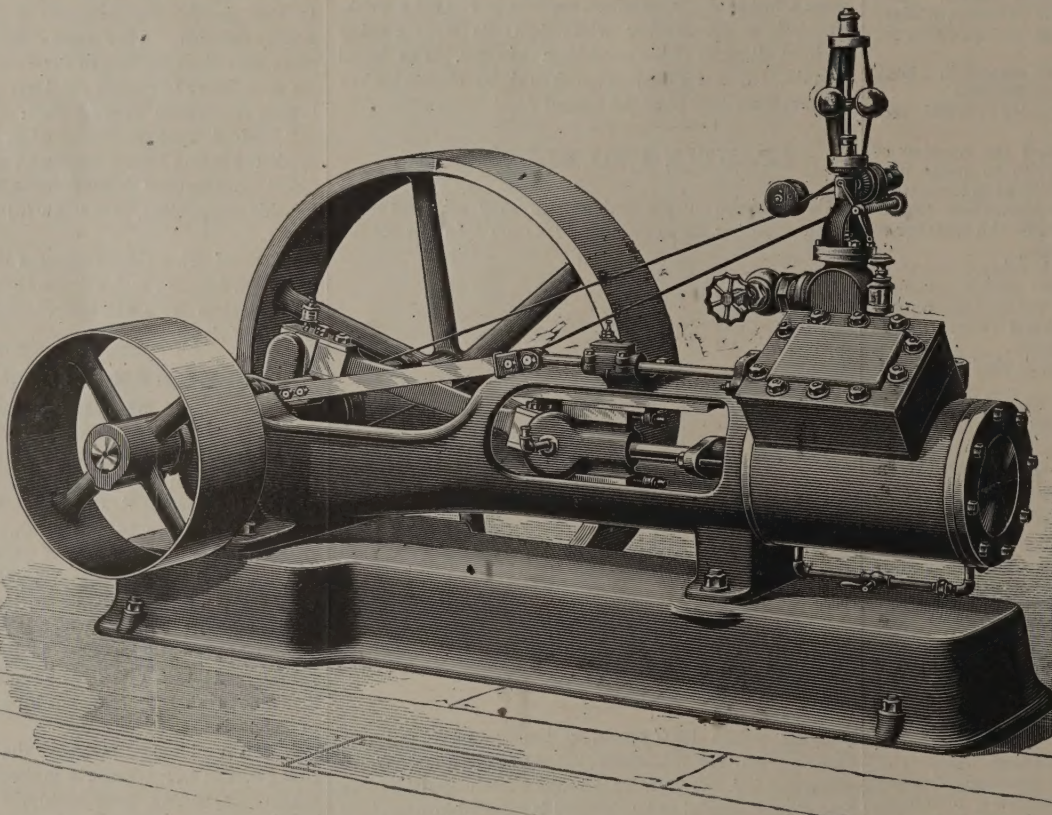
In a nutshell, in their anxiety to coddle the granger (who is now in the saddle with a big pair of Mexican spurs), the state inspectors have since harvest been giving the "doubt" to the farmer, and the consequence is that there has been no kicking on the part of the receiver, but now that the shipper has to father the stuff, and the good name of St. Louis wheat is at stake, shippers and receivers alike are indignant. It is peculiar

that no complaint from either receiver or shipper has been heard from East St. Louis, where the inspectors are the appointees of our Merchants' Exchange, and their politics have not been inquired into.

The true inwardness of this matter is that there will be a new deal in inspectors in October. The exporters and millers only control a few votes, while the country shipper and farmer have thousands. Why, to please the Alliance, Commissioners Hickman and Breathitt removed Gallagher at Kansas City the other day, and put Harman of St. Joe in his place and filled the latter's position of chief inspector with a 72-year-old lad. I admire the commissioners for one thing—they look after their own families. Breathitt has injected two brothers into grain inspecting, and Hickman has got his son and his son-in-law into soft berths.

THE JAMES LEFFEL & CO'S ENGINE.

For over a quarter of a century the well-known firm of James Leffel & Co., Springfield, O., builders of the James Leffel Double Turbine Water Wheel and Steam Engines and Boilers, have thus been engaged in supplying power for the various industries of



THE JAMES LEFFEL & CO'S ENGINE.

the country, and the experience acquired has enabled them to improve and now produce what they confidently believe the most perfect horizontal engine on the market, an illustration of which we herewith present. As will be seen, it is a center crank pattern and of the class known as straight-line engine. In this style it is claimed that they obtain the most symmetrical, compact and rigid construction, with fewest parts, and the design brings all parts in such position as to be easily gotten at by the operator.

A few of the many features of superior excellence they claim to have attained are: Casting of main frame or bed in one solid piece, so designed with regard to form and proper distribution of metal as to afford greatest strength and firmness and catch all oil drippings, cylinder being of selected metal, to secure greater tenacity and density, and provided with steam jacket having Russia iron covering fitted with brass band trimmings, giving a handsome appearance. Cylinder end of frame is turned accurately in lathe, and the cross-head guides, which are cast with and made a part of main frame, are bored out with concave surfaces in exact line with the cylinder. The cross-head is substantially made and fitted with improved gun metal gibs or followers for adjustment. The connecting rod is extra strong, provided with adjustable brass boxes at each end, wrought straps, keys, self-oilers, etc. By simply changing cap screw in web of valve eccentric from one hole to another the engine is adjusted to

run in the opposite direction. Best make of governor, having automatic stop-motion device, with spring speed adjuster and sawyers' valve, is used.

Any one in need of steam power should not fail to write them for their nicely illustrated pamphlet, giving full description of their different sizes and styles of engines and boilers, together with tables and considerable information of value to steam-users.

BARLEY.

The last monthly report of the Secretary of Agriculture at Washington speaks of the barley crop in these words:

"The returns for this crop show a decided tendency toward enlargement of the area, consequent upon the prospect of better values. The increment is not confined to any particular district, but is general in almost every section where the crop is grown. It is particularly heavy in the states of the Ohio Valley, on the Pacific coast and in the Northwest. The record for recent years shows that the money return per acre for barley is greater than that of any other cereal, and yet the home product has not been sufficient to supply the demand for consumption. Competition with barley grown in the Dominion of

Canada has been keenly felt, the official records showing an annual importation to a value in some years approaching \$10,000,000. This foreign-grown product has largely supplied the demand from the best market, the wants of brewers, leaving a somewhat limited market for the domestic product. Recent customs legislation has somewhat repressed this importation, the receipts during the first nine months of the present fiscal year being less than one half as great as during the same period of the preceding year. The condition of the crop is high throughout the whole breadth, with the exception of portions of Michigan, Wisconsin and Min-

nesota, where cool weather and local drouths interfered with germination and early growth. On the Pacific coast, in the mountain region and in Nebraska the season has been unusually favorable, and condition is reported but little below the standard adopted for purpose of comparison."

The barley acreage sown in Ontario this year is much smaller than usual, the price now obtainable for Canadian-grown barley being 30 cents per bushel plus the freight charges below the price current at Buffalo, Oswego and Albany. The Dominion Minister of Agriculture declared that we could grow the two-rowed variety for the British market, but he has not said much on the subject lately, and the general opinion is that if we continue to raise the crop at all we must stick to the old six-rowed and grin and bear the exactions at the frontier. All the authorities agree in saying that better barley, both in color and in quality, can be grown in Ontario than in any other part of North America, with the single exception, perhaps, of California.—*Toronto Globe*.

A man named Hutch, living in Fancy Bottom, near Weston, Mo., stole a wagon load of corn from Mrs. Mary Bland, a widow, and started to town with it, but got stuck in the mud before he was a mile away, and had to abandon the corn and wagon, both of which are now in the possession of the widow. This was not "Old Hutch."

INCREASE IN THE WHEAT TRADE OF BOMBAY.

The Bombay papers describe the extraordinary export of wheat from that port during the past few weeks. The *Times of India* says that every warehouse near the docks and every available piece of open ground were occupied by towering tiers of bags filled with grain, awaiting the arrival of ships to take it away to other ports, where abnormal prices have been paid for it, and where its arrival is eagerly awaited.

In 1874 the total shipments of wheat from Bombay were 33,071 tons, while in 1886 the figures went up to 617,834 tons, this being the largest total shipped up to the present year. But never since 1874, the year when the wheat trade practically began, have the receipts of wheat in Bombay been so large, or nearly so large, as in the first four months of the current year. They reached during that period the enormous total of 198,097 tons, as compared with 97,420 tons in the corresponding four months of the previous year, and 178,686 tons in the same period of 1886. The receipts continue to be so great that as fast as the ground is cleared of one consignment it is occupied by another. The real cause of this unprecedented traffic is the damage sustained by the French wheat crop, which is likely to be about 25 per cent, under the average. The traffic over the different railway systems terminating in Bombay has been gigantic during the past few months.

As recently as 1876 wheat was rotting in the Central Provinces, which is now regarded as the granary of India, on account of want of transport, but owing to the railway extensions carried out since that time—the through route to Calcutta being one of the most important—the number of growers has increased materially, and it is now worth their while to produce grain extensively. The lines have been overcrowded with grain, the receipts in Bombay being so vast that the greatest difficulty is experienced in finding warehouse accommodation for the hundreds of tons which are daily brought in from up country. Indeed, the competition for accommodation is so great that the rentals have gone up to more than 100 per cent, beyond the ordinary charges. The price of labor and cost of carting have also increased.

A REFORM PROPOSED AT TORONTO.

The grain section of the Toronto Board of Trade have had under consideration for some time the question of an official grain weigher. At a recent meeting the matter was referred to a special committee, which has since reported.

The report recommended the erection of a joint central elevator capable of holding single cars; that a committee be appointed to wait on the Canadian Pacific and Grand Trunk railways and urge the necessity of building a joint elevator here and a transfer one at junction points for weighing grain loaded outside not destined for the city. The committee considered that $\frac{1}{4}$ cent per bushel would be sufficient remuneration for the railway companies for the extra work entailed in weighing the cars of grain in the elevators, and that the weighing should be done by the inspector at the rate of 25 cents per car.

The report was adopted, and Messrs. Carrick, McIntosh, Chapman, Baird and Tilley were appointed a committee to wait upon the railway companies. In the meantime the council of the Board will be requested to exercise all possible energy to secure a qualified person for the position of official weigher.

The modus operandi at present is to have the grain weighed by the load at the city scales as taken from the car. This is often disappointing, as the quantity contained in the car is not thus ascertained till the aggre-

gate is made up, and then it is not an uncommon occurrence for the dealer to be informed that there is a shortage of several bushels. A case in point of recent date is that of Norris & Carruthers, who were out 80 bushels on one car of oats. Under the proposed change every car of grain will be run into an elevator, where it will be unloaded, weighed, replaced in the car and sealed, and a certificate of weight will then be issued by the official weigher, and this taken as final.—*Canadian Miller*.

AN ENGLISH ELEVATOR.

We give herewith a cut of a modern, first-class elevator recently completed at Bristol, Eng. American elevator men will perceive at a glance that it is far superior to anything on this continent, but of course will not admit the superiority. In describing the receiving machinery *The Miller* of London says.

"The illustration below will give our readers some idea of the manner in which the grain is unloaded and

at any angle without waste. These elevators have a working range of about 10 feet vertically, and can be raised or lowered by means of the hoist to suit the height of the grain. When not in use they are drawn back against the wall and housed under a slanting roof, not shown in the engraving. The india rubber band 26 inches wide takes the grain from the elevators into the building and delivers it into a steel lined chute, which conducts it into the bottom of another elevator. This elevator, with a belt of india rubber 24 inches wide, raises the grain to a tower, built somewhat higher than the building itself, whence it is spouted to any part of the granary floors. These elevators are capable of lifting grain at the rate of 120 tons per hour, and the total height to which it is carried is 110 feet. These elevators, etc., are driven by a 20-horse power gas engine.

"This is the second barge elevator erected for the same firm, the first one, which adjoins this building, having a capacity of 100 tons an hour, and working in connection with a system of band conveyors for distributing the grain through the various floors. The whole installation forms the largest automatic discharging plant of its kind in the United Kingdom, and the total storage capacity of the granaries amounts to about 70,000 quarters."

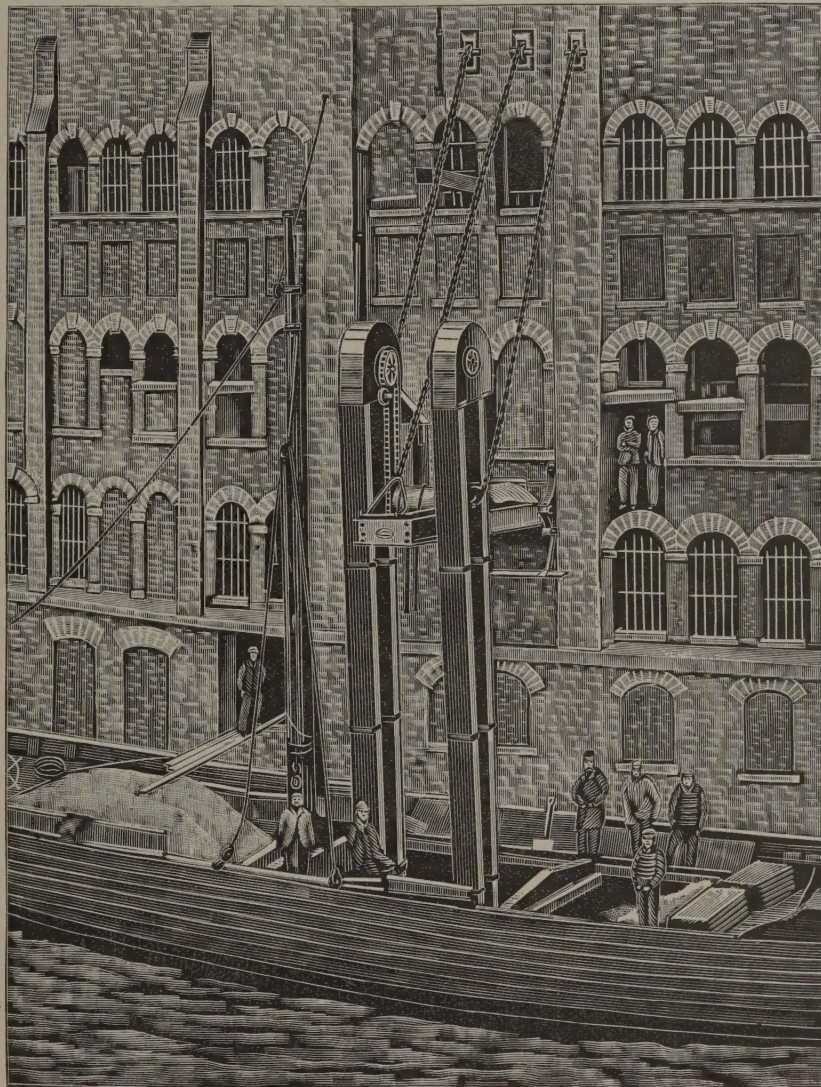
A NEW TRANSFER CAR AT CINCINNATI.

Considerable interest has been manifested by the grain merchants of this city in the trial of the Panhandle's "Jumbo Grain Elevator." A special train left yesterday [July 22] after the close of 'Change with grain merchants and their invited guests, for the Panhandle yards, where the trial was to take place. The "Jumbo" car was immediately put in operation in transferring a car of wheat received in the morning by Col. Joseph Good, and sold by him to B. W. Wasson & Co., to go East over the Pennsylvania system.

The capacity of the scale in the "Jumbo" car is 52,000 pounds, and the weight of the carload of wheat was 38,500 pounds net. The car while in operation stood upon a specially constructed track parallel to two other tracks on each side. A 15-horse power engine placed in the end of the "Jumbo" car furnished the motive power for the car as well as the elevators and shovels, and the car can be moved at will. This car, it is claimed, can transfer forty-three cars of corn in ten hours. In a test of three weeks the chief engineer reported the cost of transferring grain at forty-two to forty-five cents per car. The force of employees is five men. There are ten of these transfer cars in use in Chicago and two in Kansas City. So complete was the work yesterday afternoon that it was decided to keep the car here for permanent use.—*Cincinnati Commercial Gazette*.

Mr. Muller, manager of the Farmers' Alliance National Headquarters, said that it was the intention of the authors of the notorious "supplement" to bring the question of speculation in cereals before the farmers, and put a stop to it. The circular has been some time in the field, and the speculation in cereals goes on, and what is more, it seems to be broadening. Perhaps like a tallow candle it dies the sooner by increasing the size of the wick.

"It was a mistaken idea," said the manager of a Chicago elevator company, "to lay the charge of wanting to make Turkish wheat regular to the elevator owners. My vote was recorded against the amendment. I would prefer to buy the wheat at a discount and use it as I see fit. If the truth were known, the receiving houses were the interested parties. A few men on the floor who are always bulls thought the quickest way to kill the amendment was to say it was the proposition of the warehousemen, and it did kill it."



AN ENGLISH ELEVATOR.

received in the large grain elevator which has been erected in Bristol for Messrs B. Perry & Son. In the illustration, which shows only the working portion of the granary and not the whole elevation of the building, will be noticed a wrought-iron double plate girder, hinged at one end on the wall of the granary and suspended at the other end by chains passing through the wall. One of these chains is attached to a lifting and lowering hoist and the other two carry balance weights, sliding in guides inside the wall. The girder carries an endless india rubber band, which serves the double purpose of conveying grain into the building and driving the outside elevators. This india rubber band, which is 26 inches in width, runs through the wall over suitable pulleys into the warehouse to the extent of about 10 feet, and is driven from a shaft inside. At the outer end of the girder are hung two vertical bucket elevators, which are driven by chain gearing from the outer band pulley, the belts of which are 14 inches wide and cans 13 inches. These elevators dip into the grain in the hold of the barge and elevate the grain to the horizontal india rubber band through a patent feed hopper, so that it is laid on the band

STINKING SMUT OF WHEAT.

Last spring there was great complaint in Kansas about stinking smut on the growing wheat. So much was said about it that Prof. Kellerman of the Kansas State Agricultural College deemed it advisable to inform the agricultural public as to the origin and characteristics of the disease and the best method of treating grain for its prevention. This he has done in Bulletin No. 12 issued from the experiment station at Manhattan.

The disease called "stinking smut," "bunt," or simply "smut," is not detected until the plants have headed out, and even then it is overlooked. Before the grain ripens a careful examination reveals the fact that certain heads have a dark green color, while healthy plants present a lighter, yellowish-green color. During and after ripening of the grain, the smutted heads present the yellowish shades so characteristic of ripening wheat. When the smutted heads are examined it is found that the grains have become dark, more or less swollen, as in Figs. 5 and 8 on the plate herewith presented. They are at first of a greenish color, but become brownish or grayish when fully ripened. Because of their being usually swollen, the smutted grains push the chaff apart more than the sound kernels do, giving the head a slightly inflated and somewhat abnormal appearance, as in Figs. 1 and 2. If one of the smutted grains be crushed, it is found to be filled with a dullish brown powder which has a very disagreeable and penetrating odor. Often the disease is not discovered until the grain is threshed, when it is recognized by the odor arising, which is sometimes very rank. The smut may also be recognized during the milling, both from the odor and the dark streaks found in the flour.

Now most people who have ever been on a farm know what a smutted head of wheat is when they see it, but all are not familiar with the origin of the stinking smut or how to prevent its spread, and as smut will sometimes ruin half a crop of wheat by rendering it worthless for milling purposes, dealers may be doing themselves as well as the farmers with whom they deal a service by disseminating the information which is herein offered.

The stinking smut was formerly supposed to be a diseased condition of the wheat plant caused by unfavorable conditions of soil and climate; but it has been demonstrated beyond the possibility of doubt that the disease is caused by a parasitic plant belonging to the group called Fungi. This fungus grows within the wheat plant, and finally converts the nourishment intended for the production of the grain into a mass of exceedingly minute spores, which make up the brown stinking powder that fills the smutted grain.

The stinking smut should not be confused with the loose smut of wheat. The latter is caused by quite a different smut-fungus, which is not confined to the grains, but attacks the whole head and converts it into a loose powdery mass of spores held together by a few shreds and plates of tissue. Moreover, the spores of the fungus causing the loose smut are very much smaller and germinate in an entirely different manner from those of the stinking smut. It has been found that the infection takes place almost wholly from the smut spores adhering to the grain when it is planted. Hence, if these adhering smut spores can be killed without injuring the seed, the smut can be prevented. Since the early part of this century the universal method of preventing smut has been to soak the seed before planting in a solution of blue vitriol (sulphate of copper). Of the many forms of treatment in use, perhaps the best is to immerse the seed twelve to fifteen hours in a one-half per cent. solution of copper sulphate, and then put the seed for five or ten minutes in lime water. This, if properly carried out, will prevent the smut, with little injury to the crop. But the germinating power of the seed is somewhat lessened, and in many cases the young plants are weakened by this treatment. Still when it is known that in experimental plots planted by Mr. Kellerman in November, 1889, the smut varied from 64 to 86 per cent. the necessity of employing such

a preventive becomes apparent. Soaking in hot water at a temperature of 132° Far. for fifteen minutes, has also been found very efficacious. This is the well known Jensen treatment. Following is an explanation of the plate:

Fig. 1. Smooth wheat smut (*Tilletia foetens*), specimen from Indiana, a completely smutted beardless head.

Fig. 2. Smooth wheat smut (*Tilletia foetens*), specimen from Iowa, a completely smutted bearded head.

Figs. 3 and 4. Sound grains of wheat. Fig. 3 in profile. Fig. 4 in section.

Figs. 5-8. Smutted grains of wheat. Figs. 5 and 6 in profile. Figs. 7 and 8 in section.

RUSSIAN GRAIN PRODUCTION.

There has long been current the belief, founded upon baseless statements set afloat by the British commercial

76 per cent., as it was in the Polish provinces. We can appreciate the complete occupancy of these districts when we remember that Illinois has but 40 per cent. of its area in staple crops, other than grass, and that no other state in the Union has so large a proportion. Russian grain fields have given place to the forage needed by the increasing number of animals and to such crops as are required by a population that is increasing faster than any other in Europe and that does not emigrate. It is true that there are vast tracts of unoccupied land in European Russia, but they are of very low fertility, covered by almost impenetrable forests, or are impassable morasses or lie so far north as to preclude cultivation. So very complete is the occupation of the fairly fertile soils of Russia, except in the extreme southeast, that there is much land in cultivation that does not produce enough to pay the taxes, and the occupants work elsewhere to earn sufficient to make up the deficit. Small tracts are being reclaimed from forest and morass, but such lands are mostly of low fertility and but barely sustain the cultivators.

The Russian cultivator sows more than two bushels of seed wheat per acre and has to rest content with an average return of three and a half bushels for each bushel sown, while we secure a return of eight bushels for each one sown. Beyond question, better methods would bring better results in either case, but there is no hope for better results in Russia for many a year, as the Russian peasant is the least progressive of mankind and is thoroughly content with a bare sufficiency of black bread and plenty of vodka. When prices advance, as they soon must, he may become ambitious, the desire to improve his condition be awakened and he may try to improve his processes in order to acquire property, provided the government does not so increase his taxes as to absorb the entire advance in the value of his surplus products and thus destroy all incentive to action. This surplus has been growing of late years, not because of increased acreage or by reason of an increased yield, but is due to the diminishing price which necessitates the sale of an increasing proportion in order to pay taxes that grow, as do the military and other expenditures of the government, and the consequence is that whereas twenty years since the people of Russia consumed 162 pounds of wheat per capita, fifteen years later they consumed but 127 pounds. Under such conditions we have no cause to be solicitous about Russian competition during the few years that we shall require a European market for our vanishing surplus of grain.

While Russian population is increasing about one and one-third per cent. per annum, production, if increasing at all—that is cereal production—increases so slowly that Russian statistics fail to show it, and Russia's augmented exports are wholly due to the increasing poverty of the Russian cultivator.

This condition affects alike the noble and the peasant, and the result is that the great estates of the nobles are being sold piecemeal and are going into the hands of the merchants and bankers. It appears altogether probable that Russian exports will diminish as the population increases, as there is a limit to the taxes which even a Czar can extort from the starving people.

The farmers who go into the "hold your wheat" business had better read up on the history of such operations. A "corner" cannot be made safe unless it shall be under a single control. What kind of luck would Joseph have had in his celebrated Egyptian corn "corner" if he had taken the corn raisers of Egypt into the deal?—*Philadelphia Record*.

In 1827 there grew on the farm of Bent's, parish of Kirkmichael, Dumfriesshire, Scotland, a root of rye the size of a Portugal onion, from which sprang sixty-six stalks, each provided with a well-filled head. When ripened it was pulled up. The grains were then counted and found to contain 4,096 pickles, presumably the greatest quantity ever produced from one grain of rye.—*American Agriculturist*.



STINKING SMUT OF WHEAT.

press and by parties in this country who were interested in depressing the price of farm products, says C. Wood Davis in the *American Economist*, that Russian production, especially of the bread making grains, was increasing at an enormous rate, when the truth is that Russian production of such grains long since ceased to increase, and while the wheat acreage is now barely as great as it was fifteen years since, the acreage in rye has shrunk two million acres in the same period. As astonishing as it may appear the acreage devoted to staple food and forage crops—other than hay—has, in Russia, decreased by more than 1,500,000 acres since 1872, and with but slight probability of an increase in the immediate future. Up to the earlier part of the eighth decade Russian grain fields continued to expand, and so great had been the development that in many of the black-earth provinces the area under the plow in annual crops reached 66 per cent., and in a number of the provinces it was as high as

THE ALLEGHENY LIGHT COMPANY, PITTSBURG, PA.

The history of each single central electric light station is invariably one of constant growth. The case of the Allegheny County Light Company is no exception, and an interior view of their engine room shows that they have utilized every particle of space at their command.

In the early days of electric lighting such a development was never even considered, and this plant was located in the center of the city of Pittsburg, so surrounded by business blocks as to prevent increase beyond certain narrow limits. The business of this company has now become so large that they operate two additional central stations in Allegheny.

As is usual with a new industry, little thought was given to conveniences, and the station depends almost wholly on artificial light in the daytime. As an indication of the quality of the illumination, we note that the

the first, without in the least interfering with its proper working.

In spite of the structural drawbacks of this station, and its division into three parts, the service is excellent. The company will erect a new station in a short time and concentrate their force under one roof. With the valuable experience which the officers of this company have had since the early days of electric lighting, it seems hardly necessary to say that the proposed new station will be a model of its kind.

DANGEROUS INFORMATION.

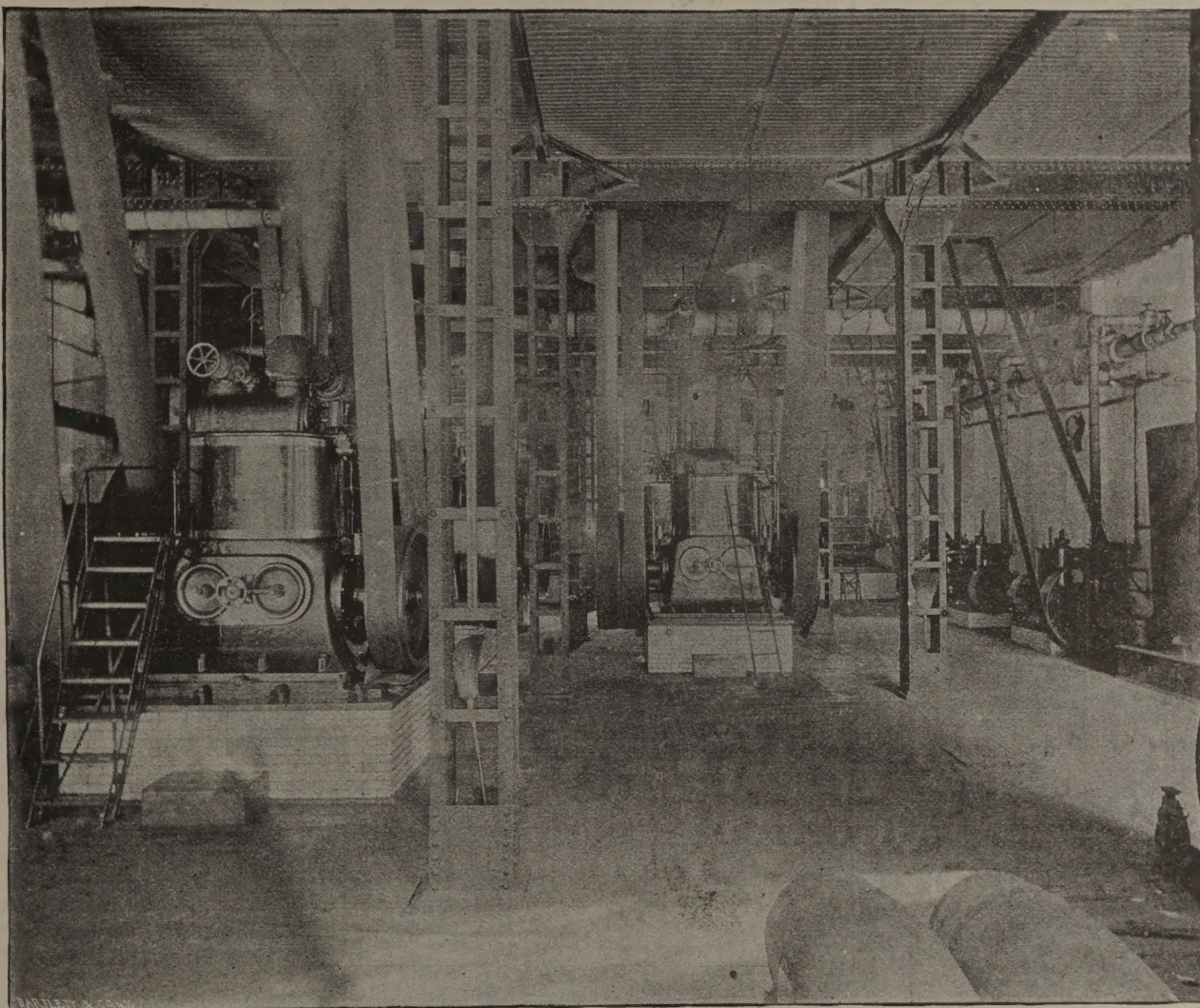
How to speculate without brains, says the *Market Record*, is what every one that speculates should know. It is easy for one to know too much to be a speculator. There are certain data of an official character that are true, and more that are untrue, or perhaps are estimates of uncertain value. To know all these that bear upon

ADMITTING MANITOBA GRAIN FOR EXPORT.

Advices from Washington state that the Treasury Department is informed that large quantities of grain from the province of Manitoba are shipped via Duluth under transit entries made for the purpose of facilitating the re-entry of the grain into Canadian territory.

It is said that at the time of shipment from Manitoba the destination of the grain is unknown, and can be determined only on arrival at Duluth. The privilege is desired of re-entering such grain at Duluth for transportation and exportation via New York and Boston in cases where a market is found for the grain in Europe. It is also represented that unless this privilege is granted exportations must be made from Montreal, thereby causing a serious and unnecessary injury to the business of American railroads.

The difficulties complained of by the persons affected



PLANT OF THE ALLEGHENY LIGHT COMPANY.

photographic plate (from which the cut is made) required eight hours' exposure, where an exposure of ten minutes should have been sufficient.

In the foreground at the left is shown the first compound engine built by the Westinghouse Machine Company, which is giving as good service as their latest pattern.

At present (but increasing rapidly) the plant consists of the following: Twenty engines, aggregating 4,105-horse power; total capacity in lights, incandescent 33,700, arc 1,260.

In the original plant Corliss engines were found to be unsatisfactory and were gradually replaced by the Westinghouse high-speed engines, closely grouped on the ground floor and belted direct to the dynamos in the second story. In some cases three dynamos are driven by one engine, while the exciter engines and dynamos have been run over thirteen months without a stop. There is little to recommend in this arrangement of machinery, except where it is desirable to crowd a large amount of power into a very small space.

In the boiler room the use of natural gas as fuel has permitted the erection of a second series of boilers over

the values of a speculative commodity, and not to know the relative bearing of each would be worse than to know nothing of them. It has been often noticed that the statistician, so called, "gets left" in speculating. It proves that it is dangerous to have just that kind of information in just that quantity that generally involves the one that is guided by it. If he knows nothing of these things and is guided by instinct or impression, he is oftener right. In the present crop year the statistical position of the cereals, as to quantity and requirements, was officially promulgated with Washington tam tams from the Agricultural Department. We were limited by them in quantity for the year. The quantity is used, but the year is not. Whoever knew all those official announcements and attached to them his faith and money, needs sympathy. He and his money are parted, but he has the estimates. They may make him wiser, but he is not so rich. Brains enough to know that official data have only approximate values have speculative uses, but less, that rely upon official reports are worse than none.

The area of flax in Kansas this year, 339,158 acres, is 48 per cent. in excess of the acreage last year.

arise, it is said, from the construction placed on the communication sent by Assistant Secretary Spaulding to the collector at Duluth May 20 last in regard to the diversion in transit of unappraised merchandise. In a letter to the collector, dated the 23d inst., Assistant Secretary Spaulding says that after a full consideration of the subject the department is of the opinion that Canadian grain arriving at Duluth in transit may be re-entered at that port for transportation and exportation via any port on the Atlantic seaboard in the same manner as though imported at Duluth direct from Canada, whenever it is the desire of the owners of the grain or their authorized representatives that this be done.

The instructions of May 20 have been modified accordingly, with the distinct understanding, however, that such modification applies solely to grain arriving under the above stated conditions.

The largest man in the South died at Elm Springs, Ark. He was 70 years old and weighed 540 pounds. He had his coffin made two years ago, and has since used it as a granary. It held twenty two bushels of wheat. It required twelve pall-bearers at the funeral.

WORRELL'S STEAM DRIERS.

The accompanying excellent cut is an exact representation of the latest arrangement of Worrell's Steam Driers, which are claimed to be the best in use for drying grain, meal and other cereal products. These driers have been in very successful operation a number of years.

The cut clearly shows both exterior and interior construction. The latter consists chiefly of a double skinned stationary steam cylinder of steel plate, having a smooth inner surface with an interior rotating agitator, resembling a long steel paddle wheel, all encased in a thick wood jacket with an intervening air space. Only a short description of their new features will be required. These are essentially the rotary feeder, arranged to vary its supply without a change of speed; a spur instead of bevel gearing, and the steam connections.

The last mentioned is the most important, as it admits of the use of exhaust or live steam, or both combined, for the heating medium. The changes from one to the other, which can be made quickly without interrupting the drying operation, are accomplished as follows: In utilizing waste steam alone, the large cock, in the foreground of the cut, is opened, the safety valve at the tail of the machine is raised and the escape from the engine passes freely through the different divisions of the drying cylinder without any back pressure, as it will be noticed that all the conduits are of ample size.

If the supply of waste steam is not sufficient, or it is desirable to increase its drying capacity, live steam is "bled" into it from the upright pipe, which is connected to the boiler. In using live steam alone, which of course gives the greatest evaporating results, the large cock and safety valve are closed and the whole supply is received from the perpendicular pipe. The drying cylinder is made of ample strength to carry steam at ordinary boiler pressure, the high temperature of which enables this machine to thoroughly dry or "kiln" grain or meal.

The positive air circulation, an essential feature of all of Mr. Worrell's driers, is enforced by a specially designed steam blower, inclosed

in the vapor pipe extending back of the drier, supplied by the small valve shown under the feed hopper. Air enters through the circular openings around the head of the machine, passes back between the wood jacket and steam cylinder, and after being heated by the latter, enters into the tail of the drying chamber. It is now drawn back to the front end through the damp granular material, from which it rapidly absorbs the moisture, and is then discharged through the breeching and vapor pipe.

In operation the damp product passes down through the feeder into the drying chamber, where it is repeatedly carried up by the agitator, from which it falls in numerous thin streams, as represented in the sectional view, and its moisture is removed by the hot air, as just described. As this action is continued, owing to the inclination of the apparatus, the product finally reaches the back end from which it is discharged, through an air trapped spout, in a thoroughly dried condition.

The voluminous air current and the utilization of the entire surface of the steam cylinder for heating purposes, protected by the wood jacket of these machines, warrants the maximum drying capacity in the minimum space.

The different steam connections of these driers makes it possible for them to handle a variety of products besides grain, meal, etc. One is in operation in Arizona on sulphate of iron, a very delicate chemical to evaporate as it liquifies at about 200° F., and two of them are in Guatemala and Costa Rica, C. A., drying green coffee, which contains nearly seven times as much moisture as ordinary damp grain. These are the first American machines to successfully accomplish this difficult work. They are also well adapted for drying the wet feeds of starch works and breweries.

For further particulars and prices of these driers, of

which two sizes are made, address the patentee and manufacturer, S. E. Worrell, Hannibal, Mo.

PREDICTS HIGH PRICES FOR GRAIN.

In an article recently published in the *Seattle Post-Intelligence* John R. Reavis of Spokane says: Erastus Wiman has written a very strong article for the July number of the *North American Review*, which is entitled "The Farmer on Top." In doing so, it ought to be said, however, that he has but given emphasis and embellishments to a line of argument very forcibly presented in the *Forum* some months ago by Mr. C. Wood Davis of Goddard, Kan. At a time when the prices of farm products have reached the lowest ebb and when the occupation of the farmer bore its most gloomy aspect, Mr. Davis, who is himself a practical farmer, came out with an array of statistics that were almost startling to prove that the ratio between supply and demand as to agricultural products, wheat in particular, was about to be reversed—that while for many years the percentage of increase in wheat had been greater than the percentage in the increase of consumption, the limit had been reached or would be soon, and that before the close of the century the United States would not have a bushel of wheat for export, but would need all that could be grown for

had been only 32,000,000 acres for the five years ending in 1885 as against 42,000,000 acres for the five years ending in 1890. For the five years ending in 1890 the increase had been only 14,000,000 acres, or but 7.1 percent. What was the cause of the decreased percentage in the increase of cultivated area? This simply: We had reached the limit of the arable lands of the United States, except certain districts in the state of Washington. The growing of wheat stops within the limit of the rain belt in the Dakotas, Nebraska, Kansas and Texas until the Rocky Mountains have been passed and we come to the Pacific coast states of California, Oregon and Washington. The great middle area of the continent embraced in the states and territories of Colorado, Utah, Wyoming, Montana, New Mexico and Arizona can never be wheat growing states without expensive irrigation. The whole state of Montana, embracing an area of 120,000 square miles, last year produced only about 600,000 bushels of wheat, less than was shipped of the crop of 1890 from the town of Oakesdale alone, in the Palouse country.

The wheat area of the United States is now on an actual decline. In the decade between 1870 and 1880 the wheat area of the world increased 22,000,000 acres, to which the United States contributed 19,000,000. In the decade between 1880 and 1890 the wheat areas of the world increased 5,000,000 acres, to which the United States contributed not one acre. The facts adduced by Mr. Wiman

and Mr. C. Wood Davis very conclusively show that we have reached the limit of low prices for wheat. Mr. Wiman says he looks for dollar wheat—that is, he expects to see farmers in the Middle states receive a dollar a bushel for their wheat delivered. We cannot expect so much per bushel in Washington, because we are too far from the great markets, but if the farmer in Ohio gets a dollar a bushel for his wheat the farmers here will get 70 cents, and 70 cents is more per acre in Washington than \$1 in Ohio.

Strange to say, the outside world is just beginning to appreciate the possibilities of wealth in the wheat product of Eastern Washington. The Palouse country proper embraces about 7,500 square

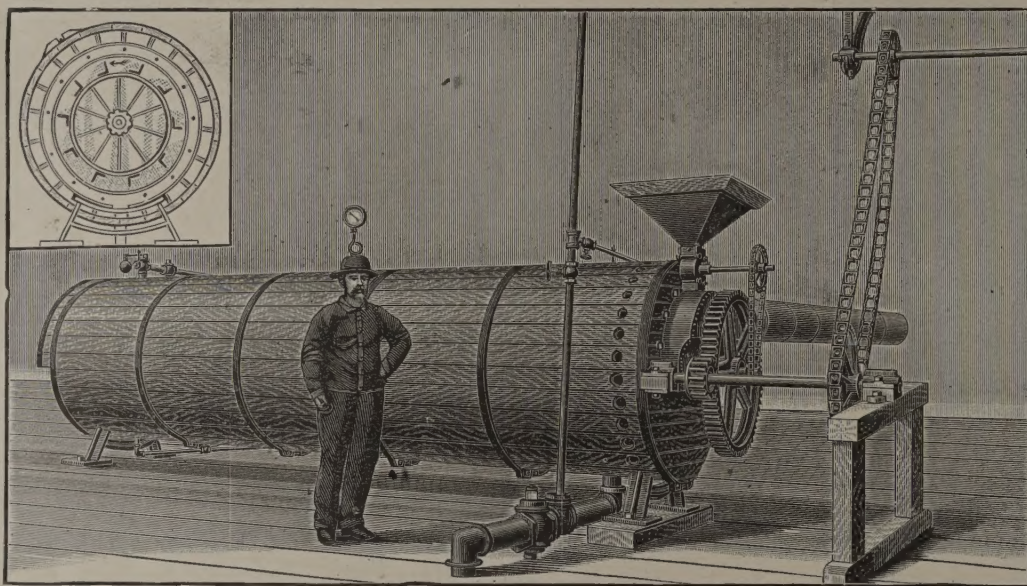
miles, or 5,000,000 acres. Probably one-tenth of it is in wheat this year. Certainly one-half is capable of growing wheat, which, at an average of thirty bushels per acre would produce 75,000,000 bushels. This sounds extravagant, but it is not unreasonable, and I should not be surprised to see the Palouse country producing that quantity of wheat in five years if prices are good. The entire wheat product of Eastern Washington last year, including the Big Bend and Walla Walla districts, was between 13,000,000 and 14,000,000 bushels. There will be an increase of nearly 20 per cent. in the aggregate this year, because there is both an increased acreage and the sure promise of an increased yield per acre, so that we may look for a total yield of at least 18,000,000 bushels.

A NEW DEVICE.

The sliding scale of storage rates advertised for the first time in this number of the *AMERICAN ELEVATOR AND GRAIN TRADE* is a new and practical little device for obtaining, in an instant, the rate of storage on grain from any date to any other date.

The scale is the invention of Mr. J. A. Demuth, who has had nearly a score of years' experience as grain accountant. Mr. Demuth is already well known to the grain trade as the inventor of the "Check Scale Beam" and the "Automatic Draft Recorder," both of which have been adopted by the Fairbanks Scale Company.

To those who are familiar with these inventions, the sliding scale will hardly need further commendation. The scale is based on the rate of one quarter cent per bushel for every ten days or fraction thereof; but any other rate can be used. It is neat and convenient in form and should be on the desk of every grain accountant.



LATEST ARRANGEMENT OF WORRELL'S STEAM DRIERS.

home consumption. Mr. Davis has been vindicated in two ways. First, by the facts developed through the census returns, and second, by the actual course in the prices of wheat.

Mr. Wiman points out that the returns of the census now being completed show, that while the population of the country, as a whole, has increased 26 per cent. during the decade, the cities have grown at the rate of over 45 per cent., while the farming population has increased only 14 per cent. The cities have increased in population more than three times as fast as the country. In the cities are the consumers of bread, in the country are the producers of bread. At the present rate of increase between the two, higher prices for food products are inevitable, and it cannot be long, as Mr. Davis argued, before the facts of the present census are revealed until we have a home market for all we can grow.

What has afflicted the farmers for several years back is overproduction. For the fourteen years ending in 1885, as Mr. Wiman points out, the cultivated area of the United States increased 112 per cent., while the population of the country increased only 44 per cent. It was in this period that the great agricultural districts embraced in the states of Kansas, Texas, Nebraska, Minnesota and the territory of Dakota were occupied and brought under cultivation. The increase in farm products was enormous. The total cultivated area in the United States for the year 1871 was 93,000,000 acres. It had arisen to 123,000,000 acres in 1875, and to 165,000,000 acres in 1880. Between 1871 and 1875 there was an increase of 32.2 per cent., and between 1875 and 1880 there was an increase of 42 per cent.

But the tide had turned by 1885, when the cultivated area had increased to 197,000,000 acres. The increase

HOW SHIPPERS MAKE MISTAKES.

BY OBSERVER.

In the March number of the AMERICAN ELEVATOR AND GRAIN TRADE in the paper on "Differences in Weights," it was shown that the errors made by elevator weighmen in recording weights account in a great degree for the serious differences between weights of shippers and receivers. In this paper I will try to show that shippers themselves are responsible for a good share of this trouble. In nearly all cases cited below, my data is derived from an intimate knowledge of actual facts. In a few instances the evidence of how the errors were made is of the prima facie sort, but none the less trustworthy.

Of this sort the following is an example: We received from Mr. Smith seventy-two cars of wheat during the season. Mr. Smith has an elevator of his own and uses a 60-bushel hopper scale. The railroad agent assured me that Mr. Smith's weights were actual. Out of the seventy-two cars only eight weighed out exactly as billed, twenty-nine cars were over an average of 70 pounds per car, twenty-four cars were short on an average of 60 pounds per car. Errors occurred on eleven cars. One car billed at 30,000 weighed out 28,780; another at 30,000 weighed out 31,280; another at 30,000 weighed out 32,600; another at 30,100 weighed out 31,510. Of the remainder six cars were short in amounts ranging from 870 pounds to 370 pounds. In support of Mr. Smith's frequent complaints of shortages the railroad agent assured me that Mr. Smith was a very careful weigher—he knew this personally—and that he invariably allowed five pounds on each draft for wastage. The following correspondence, the tail-end of our efforts to get at the bottom of the trouble, puts the matter in a different light:

Agent:—You say Mr. Smith's shipments to other points hold out and a little more. Do you receive corrections on weights of grain shipped to —. I have observed that we sometimes hear of shipments from this point to Eastern points falling short, but do not remember a single complaint of our weights. Likewise Mr. Smith did not murmur very audibly concerning the large overs on some of his shipments to this point. Will you please tell me whether you know personally how shipments to other points hold out. From being in this business a long time we have made several observations. One of these obs. is that every man who claims a shortage is cocked and primed with the statement that his shipments to and from other points always hold out. Please answer and oblige.

Grain Clerk:—On grain going to — and — I get corrected weights, but to Buffalo and East I do not. But Smith has shown me receipts where he was paid in excess of our billed weights. They make mistakes same as other people but do not like to own up to it. We have had Smith with his unmentionables down more than once. These parties never say anything when their grain overruns—that's all right—but they squeal when short. Yours, etc.

Now in loading 500 bushels into a car with a 60-bushel hopper scale, eight full hoppers would make 480 bushels, leaving 20 bushels to be weighed in as a part draft. Is there any significance in the fact that, on the cars mentioned above, the difference between our weights and Mr. Smith's approximated 20 bushels? Eliminating the usual difference of from 20 to 100 pounds Mr. Smith's first car was short 20 bushels, the second over 20 bushels, the third over 43 bushels, the fourth over 23 bushels. Does it not seem that this part of draft is somehow a factor in these differences? Not wishing to strain a point I will venture no explanation of the above case. Perhaps we may hear from Mr. Smith himself. Concerning the following cases, however, I have positive information. The errors in cases of track scale weighing were made in reading and recording weights, and in hopper scale weighing in duplicating or omitting drafts. As it would occupy too much space to tabulate all of the errors by shippers of which I have a record, I will give below only such as I know all about. The following shipments were from stations where their methods of loading are perfectly familiar to me:

TRACK SCALES.

Station.	Actual Weight Billed at—	Actual Elevator Weights.	Usual Difference Estimated	Amount of Error.	Correction in Favor of
A	30,000	30,990	10	1,000	Shipper.
	30,000	29,560	60	500	
	32,200	33,200	—	1,000	Shipper
	30,950	30,370	80	500	
	31,100	32,160	60	1,000	Shipper
B	30,400	29,300	100	1,000	
	29,700	34,610	90	5,000	Shipper (a)
	28,250	27,260	10	1,000	
	25,150	24,730	80	500	
	32,800	31,700	100	1,000	
	32,500	30,450	50	2,000	
	28,300	29,270	30	1,000	Shipper
	37,100	36,690	90	500	
	34,650	34,150	—	500	
	39,300	37,270	30	2,000	
C	37,200	39,640	—	2,440	Shipper (b)
	26,000	24,850	150	1,000	
D	36,980	36,470	40	500	

(a) In this case, before the agent knew whether his car was over or short, he wired in answer to my telegram, his gross and tare weights affirming, I suppose with a misgiving that his car was short, that his weights were "all right"—adding "my scale is new and correct." He, however, accepted my correction in his weights giving him 5,000 pounds more of good wheat than there was in the car according to his weighing. Claimed his "cleaning out" would prove whether he had made the mistake or not. Three or four months after this his "cleaning out" showed his elevator to be short exactly 1,130 pounds of wheat, which amount would have been 6,130 if this shipment had gone to some point farther East. "B" is a heavy grain shipping point and they employ "experienced weighmen."

(b) In this case the agent explains right out like a man that his weighman read his tare weight 20—350 and then recorded the same as 23—050, putting the draw in the figures in the wrong place. Perhaps the little man knew that empty cars of the series of which this was one, only weigh from 20,100 to 20,650. The following shipments were from stations where hopper scales are used. I will give but one or two errors on each station to show that they all do it. The average weight per draft as shown in the last column was obtained from copies of agents' tally sheets of previous shipments:

ERRORS IN HOPPER SCALE WEIGHING.

Station.	Actual Weight Billed at	Actual Weight Received.	Difference.	Average Weight Per Draft.
A	28,780	29,880	1,100	1,120
B	30,305	28,980	1,325	1,265
C	30,570	31,620	1,050	1,120
D	23,140	22,000	1,140	1,130
E	28,080	31,040	2,960	1,478
F	43,025	42,000	1,025	1,330
G	27,220	28,510	1,290	1,315
H	27,510	28,560	1,050	1,128
I	29,496	28,150	1,346	1,300
J	27,500	26,180	1,320	1,330
K	29,030	30,000	970	1,030
L	27,840	26,850	990	1,050
M	23,370	24,330	960	1,020
	24,620	25,760	1,140	

It will be seen from the above that in some cases the weights of a draft or two have been forgotten entirely, while in other cases an estimated weight has been tallied to cover a supposed omission. Following is a copy of a tally sheet at a station where they sometimes use two small hopper scales in loading a car:

No. Draft.	Weight.	No. Draft.	Weight.	No. Draft.	Weight.
1	1,200	7	1,525	13	1,520
2	1,510	8	1,235	14	1,200
3	1,175	9	1,550	15	1,540
4	1,590	10	1,220	16	1,210
5	1,515	11	1,530	17	1,550
6	1,240	12	1,200	18	1,110
	8,230		8,260		8,130

Total.....	24,620
Weighed at destination.....	25,760
Difference.....	1,140

Observe that the loads were delivered from the two scales alternately. Observe also that between the fourth and fifth drafts the weight of the smaller scale is missing. Observe again that the amount of grain over in the car at destination is the identical amount which was never put down on the tally sheet. Further evidence of this might be given, but enough is enough.

In my earlier experience, before I became convinced that faulty records were the real cause of short weights, I devoted a good deal of attention to weight from different makes of scales, thinking that much of the trouble might be caused by imperfect scales. I kept a careful record of shippers' weights in every case where I knew positively that they were actual. I took a great deal of trouble to ascertain what make and what kind of scales the grain had been weighed on. I have compiled tables of shipper's actual weights of carloads weighed on Buffalo Scales, on Howe Scales, on Fairbanks Scales, in comparison with our own weights (Fairbanks Scales), for the purpose of ascertaining how much or how little of this trouble could be attributed to difference in scales. While the results in certain cases would perhaps be interesting to scale makers they were not very satisfactory to me. I became satisfied I was barking up the wrong tree. Several years after I came away from this tree in despair, I accidentally struck the right one. A few months' use of

the double entry system put the matter in such a light that further comparative tables were unnecessary. However, I still kept them and now find that some of them are very interesting indeed.

I wish now to give shippers a point or two. The respect a receiving elevator has for a shipper in the matter of weights is measurable by the apparent accuracy of his—the shipper's—weights. I wasn't in the elevator business very long before I knew who of the regular shippers knew how much grain they had shipped and who didn't. Shippers must bear in mind that large elevators receiving a great many cars per day have opportunities for observing their weights in comparison with different shippers. That the shipper whose weights usually run close commands a telling amount of respect in case of a big difference, while on the other hand the loose weigher (who is known you may be sure), meets, naturally enough, with indifference. I can recall a dozen cases of both kinds while I am writing. One of the latter sort visited us regularly three or four times a season with the most "positive evidence" that we had made a big mistake. We paid no attention to his complaints, simply because we knew his cars were over as often as they were short of his weights. On the other hand I can recall two or three shortages of 10,000 pounds each which were paid by the elevator at destination simply because the shipper's weights were known to be close generally and because his evidence seemed to be straighter than that of the elevators.

Where an elevator still uses the old system (?) of recording weights, they are not going into court against a shipper who claims a big loss and has solid and reasonable proof that his weights are correct. In short every elevator company knows its careful shippers. When one of these presents a claim it meets with respect, and when such a claim is pressed, unless the elevator has good proof of accurate records on its side, the claim will be honored—in time. Needless to say the dash is intended for a joke. I had written in due time. Suggests the story of the teacher who gave out the sentence "Between you and I, etc.," for correction, and was herself brought up standing by a bright urchin with the remark that she had left out the lamp-post. In due time would be about as far from being correct as the lamp-post would be in correcting the case of the pronoun. But to resume. Among my curiosities—I mean figures—I have a number of lists at the bottom of which I see, with my mind's eye, a row of other figures like these:

? ? ? ? ?

These lists are records of close weights interspersed with very large "bulls," which I know belong to the shipper. But concerning the how I have never been able to find out. In reference to the one given below I used both postage stamps and stratagem in my effort to find out how the grain was loaded, but as the "bulls" were on the shipper's side of the fence he was only too glad to take them in and "say nothing more about it." The following cars were received from the same station and same shipper and were shipped between Aug. 22 and Oct. 26:

Shipper's Weight.	Destination.	Difference.
28,800	28,850	50
25,200	28,900	3,700
32,400	32,420	20
36,000	35,970	30
30,000	30,000	—
30,000	30,090	90
31,200	31,290	90
36,000	39,720	3,720
30,000	30,120	120
30,000	30,180	180
30,000	30,060	60
30,000	29,940	60
30,000	31,030	30
36,000	36,260	260

Now there is such a thing as a 60-bushel hopper scale—and 60 bushels reduced to pounds equals 3,600. Is any one prepared to say that this shipper did not load one hopperful too much into the second and eighth cars of the above list and forgot to take a record thereof? Now I have dozens of such lists and they all tell the same story. I do not submit them as evidence against the shipper because I do not know positively just how the cars were weighed. I am willing for my part to leave it to the man up a tree.

When General VanWyck gets the Hennepin Canal built across Iowa and Nebraska to the summit of the Rockies we can all ship grain from our harvest fields to Liverpool in "whaleback" freighting vessels.—*Omaha Bee*. Yes, when he does.

COMMUNICATED

[We invite correspondence from every one in any way interested in the grain trade, on all topics connected therewith. We wish to see a general exchange of opinion on all subjects which pertain to the interest of the trade at large, or any branch of it.]

BUILDING.

Editor American Elevator and Grain Trade:—V. P. Turner of Havana, Ill., is building an elevator at Tehenan, Ill. Hereafter please send my AMERICAN ELEVATOR AND GRAIN TRADE to me at this place.

Most respectfully yours, G. M. SLOAN.
Havana, Ill.

OF MUCH VALUE.

Editor American Elevator and Grain Trade:—We find that your journal is of much value to us, and we shall be pleased to receive it regularly. We inclose you draft for \$1, the amount due you for subscription on the AMERICAN ELEVATOR AND GRAIN TRADE for one year.

Yours truly, THE ISAAC HARTER CO.,
A. Mennel, Supt,
Fostoria, O.

HAVE REBUILT.

Editor American Elevator and Grain Trade:—Vorhes Bros. have been rebuilding an elevator at William, Ia., preparing to handle the new crop in good shape, hence my absence from Cushing. For some reason the AMERICAN ELEVATOR AND GRAIN TRADE has not arrived of late.

Yours truly, E. D. VORHES.
Cushing, Ia.

BUILDING ELEVATOR.

Editor American Elevator and Grain Trade:—I am here putting in machinery and fitting up a new elevator for Mr. George Leitig. He will handle grain and also manufacture chop and meal. This is a good point for the business, and he will do well. This is the best year they have had and the farmers are happy. I expect to get through and get home to Winfield in about a week.

Respectfully yours, F. B. WALDRON.
Seward, Kan.

BECOMING A GRAIN CENTER.

Editor American Elevator and Grain Trade:—Three elevators are now being built here; one of 75,000 bushels' capacity is being put up by McCulloch & Herriott, who are mill owners. Mann & Durham are erecting one with a capacity of 40,000 bushels, and we have begun a 40,000-bushel house. All of them will be equipped with steam engines and grain cleaners. We have received a sample copy of the AMERICAN ELEVATOR AND GRAIN TRADE. Inclosed we send you an order for \$1 for one year's subscription from next issue.

Yours truly, HUGHES & ATKINSON.
Souris, Man.

EXPORTING TEXAS WHEAT.

Editor American Elevator and Grain Trade:—The June number of your journal has been received for which accept our thanks. A few months ago the steamer Etherly left our wharf with 61,000 bushels of bulk wheat to pass over the bar, where she will lighter in sacks about 25,000 more, which will be delivered to her to-day and to-morrow, July 17. This is all Texas wheat, and also the first cargo of wheat exported from Galveston. There are two more vessels going, which will load the same size cargoes, and will immediately follow this one. We chartered these vessels and sold the wheat, it all being Texas wheat. We expect to run a cargo about every week or ten days.

The Texas wheat movement will continue until about the first of September. We think Texas raises a most excellent crop of wheat in every respect. The berry is perfect in every respect, and this vessel-load will average 60 pounds to the bushel. We think Texas, being so convenient to tidewater and the north half of the state being capable of raising from 25 to 35 bushels of wheat to the acre, as she did this year, and it being winter wheat and of the Mediterranean variety, which is the most desirable wheat for the millers' and bakers' trade, will soon become a great wheat-raising state for the foreign trade.

After the Texas crop is moved we expect to commence

exporting the Northern wheat crop. D. C. Imboden, who is manager of our company, is from Kansas City.

Respectfully, GALVESTON EXPORT COMMISSION COMPANY.
Galveston, Tex.

SHIPPED 131 CARS IN 14 DAYS.

Editor American Elevator and Grain Trade:—The wheat crop of this and adjoining counties is the largest ever produced. It will make an average of at least 25 bushels per acre, and is of fine quality. The farmers are jubilant over the good crop and the good price—80 cents—they are getting for it. Corn is in fair condition, but needs rain badly. Hay and oats are good crops. We shipped over the Monon railroad 131 large cars of the new crop of wheat from July 9 to 25, being the largest amount shipped by any firm on this route in that space of time.

Respectfully yours, CRABBS & REYNOLDS
Crawfordsville, Montgomery Co., Ind.

THE ERIE CANAL.

Editor American Elevator and Grain Trade:—Some brainless people and hired tools are shouting that the Erie Canal must succumb to the iron horse and steel rails. How absurd such a statement appears to men who know what is the matter with DeWitt Clinton's "ditch." The situation is simply this: There are five colossal abuses to the people's free waterways, and three of them are perpetrated by the railroad grain elevator combines of New York, Brooklyn and Buffalo.

First, they levy an overcharge of 1½ cents a bushel for transferring canal grain. The Erie boatmen having survived this outrage, the grain elevator cliques have taken to stealing twenty to fifty bushels of grain out of most every load of 8,000 bushels, which is equal to stealing so many dollars from the boatmen. This scheme has been improperly called "shortage." And this most infamous act failing to kill the boatmen, the schemers have resorted to delaying canal boats at their grain elevators. The canal steamer "Acme" was delayed thirty hours at the Erie Elevator at Buffalo, while they transferred and shipped 180,000 bushels of grain by rail.

The fourth imposition on canal commerce is levied by the wharfage rings of New York and Brooklyn. These gentlemen extract about \$3,000,000 annually from ships and canal boats, while the wharves are absolutely free at Boston, and no charge for wharfage is made to ships at the grain elevators at Philadelphia, Baltimore and Newport News.

The fifth and most aggravating imposition on the boatmen and upon the people, which I am pained to mention, is practiced by present state canal officials. That some of these gentlemen are too negligent and incompetent to fill the positions they hold cannot be truthfully denied. Unfortunately for the state's canal system, men with "political pulls" are given important positions instead of practical canal men. It has been openly charged, and with some degree of truth, that railroad companies control the management of the Erie Canal. Therefore, the people ought to select not only practical men to take charge of the state's great transportation route, but men of honor, men who cannot be tampered with by railroad companies, and men who will immediately stop the wholesale theft of water at Lockport and other places on the line of the canals. From my experience and observation I am frank to say that large expenditures on the state's waterways are not absolutely necessary. Give the Erie boatmen justice in terminal charges and an honest canal management, then the fools and tools who are braying about railroads superseding the Erie Canal will cease.

The winter rates by rail for carrying wheat from Buffalo to New York are 8 cents a bushel, while canal rates average about 4 cents on wheat. Only for the Erie Canal the winter rates by rail would be exacted the year round.

And once the Erie Canal is permanently closed it is probable that the entire railroad system would be consolidated and rates doubled up to suit the insatiable greed of railroad kings. Then merchandise, coal, iron, sand, gravel, clay and other commodities could not be shipped from tidewater to Buffalo and intermediate points on the Erie Canal for 35 to 50 cents per ton, which the Erie boatmen gladly accept. Instead of these low rates, it is safe to predict that the railroad companies would exact ten times more than present rates are.

As evidence of this fact, before the railroad companies got control of the grain elevators in New York and

Buffalo, grain was transferred by hand and horse power for less than half the present charges are by the latest improved steam grain elevators.

Respectfully, M. DE PUY,
President of the Canal and Harbor Protection Union of the state of New York.
Buffalo, N. Y.

GALVESTON AS A GRAIN EXPORTING PORT.

Editor American Elevator and Grain Trade:—Since you solicit correspondence upon all topics of interest connected with the handling of grain, I take the opportunity of presenting to you some facts regarding the port of Galveston as an export market for the grain products of the Western states and territories. West of the meridian of Galveston there is, annually, a surplus of corn and wheat over and above that used for local consumption, such as seed, bread and feed, much greater than the total exports of those cereals from the entire United States. The same conditions apply to beef, pork and mutton. The only article of farm production that is exported from the United States, the surplus of which for export, not produced west of the meridian of Galveston, is cotton, and of that product more than one-half is raised west of the Galveston meridian. To this surplus producing section of the United States, Galveston is nearer on an average by 735 miles by rail than is New York, consequently the export of the products of the farm should be almost entirely through the port of Galveston, which would save to the producer (with equal mileage freight rates) \$40,000,000 per annum in transportation charges, the ocean rate being practically the same from Galveston as from New York.

A little more than one year ago a cargo of corn was purchased in Kansas and shipped to Europe via Galveston at a rate of 15 cents per bushel less than the rates from the same section via New York, which had the effect of advancing corn in that state from 12 cents to 27 and 28 cents per bushel, making it practically out of the question to continue exporting that year's crop of corn. The export of wheat has already begun on an extensive scale via Galveston, confined at the present to Texas wheat of this year's growth. Great preparations are being made, however, to handle extensively the large surplus of wheat that Kansas is now harvesting.

We have one large elevator of 300,000 bushels' storage capacity, and 100,000 bushels' loading capacity each twenty-four hours. We need more of equal or larger capacity in order to meet the present demands, and in the immediate future we will require from ten to fifteen such elevators. It would pay some of your patrons to investigate this necessity for elevator storage and handling and make arrangements to supply the demand. A great field is now being opened up for enterprising grain dealers and exporters to do business in Galveston, the indications being that this port will become the largest grain export market in the United States.

The British steamship Etherly left here last week with the first consignment of Texas wheat that ever crossed the Atlantic, bearing 83,500 bushels. Two other steamers are now loading with wheat, and another is en route, while I am reliably informed that several others are chartered and will soon leave European ports for Galveston to load with our wheat and flour for foreign countries.

If any of your readers will correspond with the secretary of the Galveston Chamber of Commerce he will take great pleasure in giving them detailed information regarding Galveston as a grain port.

Very truly yours, D.

Cincinnati is probably one of the greatest distributing centers of peanuts in the country. There is one dealer in that city who claims to distribute nearly 8,000,000 pounds of the nuts every year to the trade.

St. Louis claims that a car famine is imminent. The railroad companies are doing all that is possible, and empty cars are on the way from the East and South, which will give some relief. It may be excellent management for railways to send cars East for a cheap long haul and have them returned empty, but more net money can be made by keeping the cars for the home business, where they can be unloaded at terminal points promptly, ready for a new trip.—*Toledo Market Report.* Transfer houses should be erected at grain centers and at railroad junctions, then it would not be necessary to send the cars of Western roads to the Atlantic seaboard, and the consignee would receive the identical grain shipped, and all of it, too. None would be taken for future shrinkage.

Queries and Replies.

Questions and answers are inserted under this head free of charge, and all are invited to avail themselves of this column.

No. 5. Address of Buckwheat Dealer.—I would be very much pleased to learn of some dealer who makes a specialty of buckwheat. Will such a one please give me his address through the AMERICAN ELEVATOR AND GRAIN TRADE?—MILLER.

No. 6. Book on Varieties of Wheat.—Will some readers of the AMERICAN ELEVATOR AND GRAIN TRADE please inform me if any work is published on the different varieties of wheat produced in the United States; and if so, by whom, and where can I get it.—A. L. LEUTZ, Treichler's, Pa.

No. 7. Problem in Power Transmission.—I would be pleased to receive an answer to the following from some reader of the AMERICAN ELEVATOR AND GRAIN TRADE. I wish to change the position of the engine in the basement of my building, moving it around so that the engine shaft will be at right angles to the shaft in the cupola which drives five elevators. The engine is immediately below the shaft in the top of the house, 40 feet above. What kind of an arrangement would be best to use in this case to transmit power from engine to elevator shaft?—X.

No. 8. Automatic Scales in Law.—In reply to Query No. 1 I would say that the only scale recognized by law in this country is the balance. My authority for this statement is a resolution of Congress passed June 1, 1836. In case you received grain in carloads and there is a shortage, you cannot recover from the railway company unless your automatic scale is so built that the levers are of even length, making it a balance recognized by law. There is an automatic scale made with even length of levers and suit could successfully be brought in the courts.—A. G. S.

DISTRIBUTION OF CARS IN MINNESOTA.

Anticipating the usual scarcity of cars in which to carry wheat when the crop is ready, the Minnesota warehouse commission has sent the following notice to general managers of all roads in the state:

Dear Sir: The present promise of an unusually heavy crop of farm produce this season in Minnesota induces the railroad and warehouse commissioners to address this circular to the railway managers of Minnesota with reference to the uniform and thorough system for the distribution of cars among the several stations and ship piers upon their respective lines of road.

You are aware of the difficulties which have heretofore been encountered, growing out of a shortage of transportation facilities at certain seasons of the year. More complaints are made to this commission because of this difficulty than from all other causes combined.

That delays may happen in the busy season in furnishing cars to all who apply for them in such numbers as are demanded, has been repeatedly demonstrated in our past experience. That such delays are not always the fault of the railway companies, and to that extent are excusable, is evident from the fact that the statutes of this state (subdivision b, section 7, chapter 10 General Laws of 1887) having provided a rule in accordance with the demand made upon it by all persons desiring transportation. This rule is as follows:

"(b) Whenever any railway company doing business in this state shall be unable, from any reasonable cause, to furnish cars at any railway station or side track, in accordance with the demands made by all persons demanding cars at such stations or side tracks for the shipment of grain or other freight, such cars as are furnished shall be divided as equally as may be among the applicants until each shipper shall have received at least one car, when the balance shall be divided ratably in proportion to the amount of daily receipts of grain or other freight, to each shipper, or to the amount of grain offered at such station or side tracks."

The obligation of the common carrier to the public requires the use of their facilities fairly and without discrimination as to persons or places, in such manner as is best calculated, in the prosecution of their business, to afford the largest possible benefit. An honest and fair endeavor to accomplish this, with such facilities as are at their disposal, is what may be reasonably expected and required of common carriers.

It is the opinion of the commission that the complaints made to it upon this subject are founded upon the belief, whether just or otherwise, that in this distribution of cars in seasons when there is a shortage in facilities, there

is habitually practiced a discrimination in favor of individuals or of certain shipping points.

It is the duty of all common carriers to so conduct their business as to show conclusively that such discrimination is neither allowed nor practiced in any case.

If this can be made to appear we think the public generally will bear with greater patience the lack of accommodation which so many desire to secure at the same time.

As a means to this end the commission suggests that you issue instructions to your agents in this state which shall contain:

First—The text of the rule made by the statutes of this state as hereinabove stated.

Second—That agents be instructed to require of shippers, as far as practicable, at the commencement of each month, an estimate of the number of cars they will be likely to use during such month, such estimate to be signed by the shipper or his agent, but not to be regarded as a requisition for cars for any given day or date.

Third—A record to be kept of requisition for cars for shipment, such record to show the date of each requisition and the order in which received.

Fourth—Cars to be furnished in the order in which requisitions are filed.

Fifth—When requisitions exceed the number of cars available, the cars furnished must be divided among applicants as provided by statute, until each shipper shall have received one car, when the balance shall be divided as to shippers, ratably in proportion to daily receipts of grain, to each shipper—this proportion it is the duty of the shipper to show—or as to stations, in proportion to the amount of grain offered at such station for shipment.

Sixth—A demurrage charge should be rigidly collected when cars are held an unreasonable time for loading or unloading.

The commissioners also suggest that a record be kept for the use of agents of estimates for the month, date and hour of filing requisition, destination of cars ordered, date when furnished, number and loaded billed, with date. This record they suggest should be kept at each station, and should be open to the public every day during business hours.

NEW ORLEANS AND THE GRAIN TRADE.

The agitation caused by the present activity in the movement of wheat through this port for export to Europe, and the development of the fact that this city is greatly deficient in stationary elevator capacity for handling bulk grain, is by no means the first notice the merchants of this city have received that better facilities are needed here if it is desired that New Orleans should become one of the great grain ports of the country.

Year before last there was a very large corn crop, and a more than usual quantity of that grain was exported to Europe. During that season not only were the arrivals here for export by river from St. Louis very large, but there was also an uncommonly heavy movement by rail. Then for the first time was this city brought face to face with the fact that she did not possess elevator capacity sufficient to handle grain arriving by rail in large quantities. Although this fact was known, and its knowledge prevented much corn coming here that naturally would have come, yet the amounts that did arrive overtaxed the handling facilities to such an extent that there was a perfect blockade of corn in cars, occasioning considerable inconvenience to both shippers and consignees and doing more or less injury to the reputation of this port.

In spite of that experience the natural advantages of this city are so great, with its splendid network of railroads and unrivaled water transportation, with a deep water harbor, that the grain shippers of a large section of the West are anxious to send their wheat surplus here for export this season, and if reports are to be believed fully three times as much wheat is seeking an outlet through this city as can possibly be accommodated. Merchants are therefore placed in the anomalous position of having to refuse business which is anxious to come here.

With this experience before them, the business men of this city should at once devise means for providing the needed elevator facilities. If, after two successive experiences such as that of the present season and of two years ago, our merchants permit the present state of things to continue, they will justly deserve to be accused of a lack of enterprise and commercial shrewdness.

It would appear that it ought to pay some of the great railroad systems centering in this city to build elevators capable of handling large quantities of grain, and it is stated that they are prepared to do so as soon as a belt line is provided. The merchants and railroads should certainly come to some speedy agreement on this point, and

it also might be developed that private capital could be profitably invested in an elevator enterprise.

With ample elevator and storage capacity provided, many commission merchants here would be encouraged to solicit consignments of bulk grain, and the grain shippers in the West who are desirous of exporting their surplus via this port, could forward all the grain they wished with perfect assurance of prompt dispatch and safe handling. With ample storage room bulk grain could be sold here on the open market by a simple transfer of the elevator certificate. New Orleans in that way might be made a regular market for bulk grain, instead of being merely a forwarding point as at present. In the next five years we shall hope to see a very different state of affairs, as by that time, if our people should not have moved in the matter, strangers appreciating the extraordinary advantages of this city for a grain business, will have seized upon the opportunities presented.—*Picayune, New Orleans.*

Trade Notes.

If a merchant has goods, but customers none,
And ruin stares him in the face;
If his credit's at zero, his creditors run
From morning till night to his place,
Is anything helpful to brace up this man,
If he only the remedy tries?
Can any one tell of a trade-bringing plan?
Chorus—
"Why, tell him to advertise!"

The Gainesville Hay Press Company has been incorporated at Gainesville, Ga., with a capital of \$3,000.

The Chase Elevator Company of Chicago report a large business. They have four sets of plans on the board all in process of building.

The E. H. Pease Manufacturing Company of Racine, Wis., write us: "We have been getting a whirlwind of trade in oat clippers the past sixty days."

A drop of ink will make thousands think of you if you put it in the right place, such, for instance, as a page of the AMERICAN ELEVATOR AND GRAIN TRADE.

A really permanent and good advertisement must bear the impress and contain the elements of truth, sincerity and honesty of purpose; the same being true of everything permanently good in life.

"Early and often," should be the advertiser's motto. Spasmodic advertising is the most costly. (What would you think of a person rowing a boat who turned around every few strokes to see how far he had gone?)

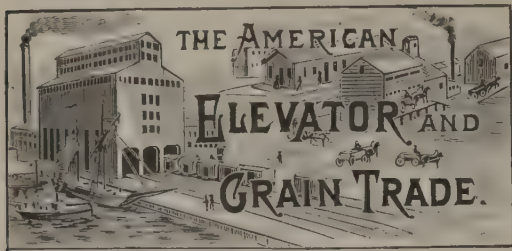
John S. Kidd of Des Moines, Ia., manufacturer of portable dumps and elevators, writes us: "I am getting all the work I can do at present, but have put more men at work and added machinery to fill orders promptly."

The majority of people are regular readers of regular papers. The arrangement of the news and advertising columns become fixed factors in their minds; they depend upon their favorite paper and, unconsciously or not, learn to rely upon the advertisements in it.

Do not make the fatal mistake of considering that advertising space is not merchandise. It is as much so as the desk in your office, or the machine in your factory. It is no more a luxury than the buttons on the pantaloons or the lining of the overcoat. The man who considers advertising a luxury and advertises should have a guardian placed over his business.

The Chicago Steel and Iron Roofing Company of 376 to 384 S. Canal street, Chicago, write us: "Our business since April has assumed unusual dimensions. We are furnishing material largely for elevators, drying kilns, mills, factories and the trade in general, reaching in large lots Kansas, Missouri, Texas, Michigan, Wisconsin, North Carolina, Oregon, Alabama and a number of other Southern states, besides reaching out through the East and Southeast. We feel that a part at least of this trade may be due to a perusal of your valuable journal."

If the movement to prevent the whole crop from being thrown on the market at once shall succeed, it will result not only in benefit to the farmers, but to all legitimate business. It will hurt the speculators and gamblers, and that will be a good thing. Anything that will drive them out is a good movement.—*Indiana Farmer.*



— PUBLISHED ON THE FIFTEENTH OF EACH MONTH BY —

MITCHELL BROS. COMPANY.

(INCORPORATED.)

— OFFICE —

Howland Block, 184 and 186 Dearborn St.,

CHICAGO, ILL.

Subscription Price. - - - \$1.00 per Year

English and Foreign Subscriptions, - - - 1.50 " "

English and Foreign Subscriptions may be sent to W. H. Smith & Son, 186 Strand, London, W. C., Eng.

A. J. MITCHELL, - - - Business Manager.

HARLEY B. MITCHELL, - - - Editor.

ADVERTISING.

This paper has a large circulation among the elevator men and grain dealers of the country, and is the best medium in the United States for reaching this trade. Advertising rates made known upon application.

CORRESPONDENCE.

We solicit correspondence upon all topics of interest connected with the handling of grain or cognate subjects.

CHICAGO, ILL., AUGUST 15, 1891.

NEBRASKA'S WAREHOUSE LAW.

The Nebraska Warehouse law went into effect Aug. 1 and the enthusiasts are at last beginning to realize that it will be of no practical benefit to any one but the inspectors. The State Board of Transportation called a meeting of grain growers and dealers at Lincoln last month and those present expressed themselves as in favor of the adoption of Chicago's standard of inspection for both winter and spring wheat, also for barley, rye and flax, and the St. Louis standards for corn and oats. The plan of the Minnesota Inspection Department in grading dirty wheat seemed to meet with the approval of those present, so the board will probably adopt a rule providing that dirty wheat shall be given the grade which it would receive if cleaned with a dockage to allow for the dirt.

One chief grain inspector will be appointed for the state, and those in charge of the department at the different cities will be deputy chief inspectors. A strong effort will be made to make the department self-sustaining from the start. The charge for inspection has been fixed at 75 cents per car, which, of course, must be indirectly paid by the producer. The consumers of the state may pay a small percentage of it, but the consumers outside the state will pay none of it, as the Nebraska grain has to compete outside with the grain that is not heavily taxed for inspection. Another heavy tax is levied upon the warehousemen, who have to give a bond of \$10,000 and pay a license fee of \$50, \$10 and \$5 respectively, according to the class to which their house belongs.

The board has decided that the maximum charge for storage and handling of grain, including cost of receiving and delivering, shall be for the first ten days thereof 1 cent per bushel, and for each ten days or part thereof after the first ten days $\frac{3}{8}$ of 1 cent per bushel, provided, however, that grain damp, or liable to early damage, as indicated by its inspection when received, may

be subject to 2 cents per bushel storage for the first ten days and for each additional five days or part thereof not exceeding $\frac{1}{2}$ of 1 cent per bushel.

The great bulk of the state's grain products which are shipped to Missouri River points are consumed outside the state and sold according to the grading given it in some outside market, so that the high charges for useless state inspection and for storage will be avoided whenever possible. This will cause a decrease instead of an increase in the grain trade of the river cities having state inspection, for shippers will send their grain out by less expensive routes.

At present it seems probable that no elevators outside of Omaha will be operated as public warehouses and the public warehouses at that point will receive little grain unless the proprietors buy it on their own account. Country buyers who are compelled by lack of storage room to ship their grain will prefer to ship their grain to more advantageous markets, where the cost is less and the facilities better. We do not think the law will benefit the grain trade of Nebraska in the least and many prominent dealers of that state are of the same opinion.

EVERY FARMER HIS OWN WAREHOUSEMAN.

The latest slogan of the Alliance is that its members will not only "hold their wheat," but will do the storing and handling themselves. Three farmers' shipping associations have been given charters by the Kansas secretary of state at Topeka. The secretary of the Kansas Alliance says that arrangements have been perfected to store one-half the wheat crop of the state, or say, nearly 30,000,000 bushels. According to his story, big elevators at Kansas City, St. Louis, Baltimore and other places, have agreed to store wheat and advance 75 per cent. of its value to the owners. It would take 300 elevators of 100,000 bushels' capacity each, to store half the wheat crop of Kansas, and the statement of the secretary sounds a little fishy in other respects; but that the farmer contemplates going into the warehouse business may be taken as settled. And let it be understood that the farmer not only has a right to hold his wheat for an advance if he wishes to, but a further indisputable right to go into the warehouse business if he wants to.

The grain dealer, the miller and the railroads would all be pleased to see farmers hold back their wheat more than they have done in years past. The effect would simply be to make prices more uniform and insure better delivery. As it has been in past years in the newer states, the completion of harvest has been marked by a grain glut and blockade. That such a state of affairs is particularly advantageous to somebody is one of the pet illusions of the Alliance leaders. Should their plan of holding back grain prove successful they will be surprised to find that among other things accomplished, they have pleased their supposed enemies, the grain men, millers and railroads.

It is notable that this new scheme of supplanting the so-called middleman, is popular only in the newer states. Somehow the farmers in such states as Ohio, Michigan, Indiana and Illinois do not see the need of any such movement. The explanation is simple. Farmers in the older states are better provided with storage facilities on the farm, and do not find it necessary or desirable to go into the warehouse business. They can sell or hold the wheat, as best suits them; and Indiana, with her small territory and immense wheat crop, fully as large as that of Kansas, complains of no grain blockade.

Another thing. Farmers in the older states have found that "holding grain for a rise" is not always the most profitable course. An eminent Michigan farmer stated not long since that a careful noting of prices for twenty years, with shrinkage and possible deterioration taken into account, had convinced him that in his locality, at least, there would have been no money in holding grain over the winter. Still, it would be better for the farmer and better for everybody else, if farmers

had better facilities for storing grain on the farm. They would be "independent" of the middleman, and could market when the price suited them. If they go into the warehousing business on their own hook, they will make an addition to their wisdom gained by experience. They will certainly find that the producer who acts as his own middleman, like the man who is his own lawyer, has a fool for a client.

THE RUSSIAN DECREE AGAINST RYE EXPORTATION.

On the eleventh day of the month the official journal at St. Petersburg published the imperial decree forbidding the export of rye and rye meal of every kind from the domains of the czar. This action was not unexpected at European capitals, but it nevertheless created a sensation all over Europe, and especially at Berlin. Germany and Austria are the chief importers of Russian rye, and Germany in particular will feel the deprivation seriously, for there rye is a staple almost as much as in Russia.

The diplomacy of the czar's government is apparent in this action. Both Germany and Austria, which will be most affected by the decree, belong to the *Dreibund* France, which occupies a position of friendship to Russia, and England, which will hardly league against Russia except in self-defense, are importers of Russian wheat, which is untouched by the decree.

The effect of the Russian ukase has been to raise the price of rye in Germany almost to a level with that of wheat, and the prices of other breadstuffs are expected to advance very shortly, in sympathy. The German Government, it is understood, will not attempt to relieve the situation by removing grain duties until commercial treaties have been signed with Austro-Hungary, Switzerland and Roumania. Widespread discontent is felt in consequence of this action, as it is certain that no matter what commercial arrangements are made with other countries, the loss of Russian rye cannot be compensated for.

Of course one effect of the Russian prohibition will be to increase the demand for breadstuffs of all kinds from countries that have a surplus for exportation. How serious the position is considered abroad is shown by the comment of the London *Daily News*, which, in reviewing the action of Russia, says that it is reassuring to learn that the crops in the United States promise to yield an exceptionally large harvest. "The farmers of America," the paper declares, "are masters of the situation, and it is to be hoped that they will use their strength mercifully. The making of corners in the necessities of life is never laudable, and in the present juncture it would be little short of fiendish."

NEW YORK'S STATE CANALS.

Our old friend, Capt. M. De Puy, president of the Canal and Harbor Protective Union, has addressed an open letter to the people disclosing the true state of affairs respecting the canals of the state and the conspiracy against them by the elevator rings at the two ends of the water route. Capt. De Puy shows that there are five colossal abuses perpetrated against the canals. These are first, an overcharge of $1\frac{3}{4}$ cents per bushel for transferring canal grain; second, a steal of twenty to fifty bushels out of almost every load of 8,000 bushels under the name of shortage; third, a system of delaying canalboats at the elevators; fourth, the wharfage rings of New York and Brooklyn extract about \$3,000,000 annually from ships and canalboats, while there is no charge for wharfage to ships at the grain elevators of Boston, Philadelphia, Baltimore or Newport News; fifth, the state officials fail to do their duty.

There is little doubt that the railway managers of the New York lines are doing their best, or rather, worst, to permanently close the canals. They have left no stone unturned and pulled every wire to bring about that result. The influences they have brought to bear at Albany are more than questionable, and the friends of the

canals have always had to contend against a strong and unscrupulous lobby. The canals are now free, and to keep them free and maintain them should be the care of the people. One phase of the fight against the canals since tolls have been abolished, is the withholding of sufficient appropriations under the specious plea of economy. The situation to-day is rendered intolerable to the boatmen by the abuses named above. The cause of the boatmen is the cause of the people, as the canals are the regulators of freight rates. Were the canals permanently closed the railroads would be masters of the situation. The extortion practiced on the boatmen must in some way be abolished, or the canals will be useless, for the business of the boatmen has been unremunerative for years.

What is the proper remedy to apply, is a question. State regulation has been declared constitutional, and may be supplemented by state transfer elevators. The people would be justified in taking almost any step in defense of their waterways against the aggressions of their enemies, even to the extent of going into the business of transferring grain as a state enterprise. But most of all, the people need faithful public servants, not only to make laws but to see to their enforcement.

THE AUGUST CROP REPORT.

The August returns to the Statistician of the Department of Agriculture make the condition of corn 90.8; spring wheat, 95.5; spring rye, 89.6; oats, 89.5; barley, 93.8; buckwheat, 97.3; potatoes, 96.5; hay, 90.9. Corn has fallen off two points during the month, the decline being almost entirely in the states of the Ohio Valley and the Northwest. In the surplus states the averages are: Ohio, 93; Indiana, 88; Illinois, 88; Iowa, 90; Missouri, 87; Kansas, 88; Nebraska, 89. Spring wheat in the principal states was as follows: Wisconsin, 97; Minnesota, 98; Iowa, 95; Nebraska, 97; North Dakota, 99; South Dakota, 98; Washington, 90.

Oats have improved two points during the month, and the figures of condition indicate a medium yield per acre. Averages in states of large production are: New York, 92; Pennsylvania, 91; Ohio, 86; Michigan, 86; Illinois, 86; Wisconsin, 89; Minnesota, 94; Iowa, 98; Kansas, 90; Nebraska, 96.

Barley shows improvement and promises a large crop in most of the districts of heavy production. The first return for buckwheat is the highest for eight years past, with slight increase in acreage.

NORTH DAKOTA ELEVATOR COMPANIES OBJECT.

The elevator companies doing business in North Dakota have decided not to operate their houses as public warehouses, as the warehouse commissioners have shown themselves to be unreasonably arbitrary in their interpretation of the law and in the adoption of rules for governing the storing and grading of grain.

The elevator men are rightfully opposed to making daily reports to the commissioners of the number of bushels of each grade received, the amount of dockage and price, and the number of cars and bushels shipped, with grade and destination. Such reports would be of no use whatever to any one but speculators, and to compel the elevator men to go to the expense of making daily reports for their benefit would be an outrageous imposition. This is a rule established by the commission, but of course will not be enforced, as the elevator men cannot afford to keep a large office force on the storage charges established, so will operate all houses as private. The law provides that the charges shall not be greater than 2 cents per bushel for receiving, elevating, insuring, delivering and twenty days' storage, and ½ cent for each succeeding fifteen days or part thereof, and that the charges shall not exceed 5 cents for six months.

The commission has also decided that the price to be paid at the elevators shall be Min-

neapolis and Duluth prices, less freight charges and 4 cents to pay storage and inspection. It has also decided to inspect at the boundary line all grain shipped from the state and charge 50 cents per car for inspection. This of course must be paid by the producers, but they do not see it that way. The elevator men and the railroad companies are strenuously opposing it, and have branded the action of the board as a scheme to give pets a fat job.

Unless the commissioners make a number of concessions the elevators will be operated as private houses, despite the threat of the commissioners to close the first house operated as such. The state cannot compel a man to run his house for the use of the public, and the commissioners must be a set of prize fools if they think they can do so. The crop cannot be marketed unless the elevators are kept open, so the commissioners will be compelled to adopt more reasonable rules and regulations.

ORIGIN OF THE GOVERNMENT WAREHOUSE SCHEME.

There is nothing new under the sun, saith Solomon; though he might have added that some things have a more respectable parentage than other things. The idea of public warehouses under government patronage is at least a hundred years old. It was advocated in 1795 on account of the scarcity of wheat and the high prices. Public granaries were a fixed fact at Rome for hundreds of years before the fall of the empire, and the distribution of free grain was one means of buying the populace into subjection. The public granaries then were for the benefit of the consumer, and not the producer. The proposition made in England in 1795 that the government should build granaries and enter the market to the extent of being able to fix prices, was combated by Edward Burke, one of the greatest men of his or any other age. Curiously enough, the scheme was then, as now, leveled against the "middleman." Burke, himself a farmer, wrote:

If such a scheme is adopted I should not like to answer for the safety of the granary, of the agents, or of the town itself; the first storm of popular frenzy would fall on that granary. In an economical light I must observe that the construction of such granaries throughout the kingdom would be an expense beyond all calculation. The keeping them up would require an army of agents, storekeepers, clerks and servants. The capital to be employed in the purchase of grain would be enormous. The wastes, decay and corruption would be a dreadful drawback on the whole dealing, and the dissatisfaction of the people at having decayed, tainted or corrupted corn sold to them, as must be the case, would be serious.

* * * * *

But if the object of this scheme should be what I suspect it is, to destroy the dealer, commonly called the middleman, and by incurring a voluntary loss to carry the baker to deal with the government, I am to tell them that they set up another trade, that of a miller, or a meal man, attended by a new train of expenses and risks. If in both these trades they should succeed, so as to exclude those who trade on natural and private capitals, then they will have a monopoly in their hands, which under the appearance of a monopoly of capital will, in reality, be a monopoly of authority, and will ruin whatever it touches. The agriculture of the kingdom cannot stand before it. * * * My opinion is against an overdoing of any sort of administration, and more especially against this momentous one of all, meddling on the part of authority; the meddling with the subsistence of the people.

It is pleasant to note a return to sense on the part of some eminent Alliance leaders who no longer exact advocacy of the warehouse scheme as a test of fealty to the Alliance. Even Peffer's paper, the *Kansas Farmer*, is not loyal to the idea. The whole scheme was the plan of crazy zealots to have government supplant private enterprise for the benefit of a class. It never could recommend itself to the sober second thought of the majority of the farmers.

ATTENTION is directed to the card on another page, of Messrs. Callahan & Sons, proprietors of the Central Elevator and Warehouse at Louisville, Ky. Their house has been established since 1856, and their intimate acquaintance with the business and ample facilities, place them in a position to trade with mutual advantage. They will be pleased to correspond with reference to business.

DECLARE AGAINST THE IRREGULAR.

The action of the Grain Receivers' and Shippers' Association of Cincinnati in declaring against the irregular buyer is a step in the right direction, and is one that should be taken by every grain receivers' association whose members desire to do business with responsible buyers who understand their business, are opposed to trickery and dependent upon honorable business methods for success. The scalper or trickster, who travels about the country securing in whatever way he can business that rightly belongs to the regular established dealers, should be discouraged in every way possible.

Receivers at grain centers who send buyers into the country during the busy period to compete with the established dealers do not deserve and should not receive any business from regular dealers. Self-interest should prompt the regular country dealer to protect the business of his class by opposing the irregular, who seeks only to secure the best of the regular dealer's trade.

The Cincinnati Receivers' Association has taken the initiative in declaring against the irregular, and deserves more than a vote of thanks from the regular country dealers. The members of the association, and especially those who were active advocates of this action, merit shipments from every regular country dealer who can conveniently ship to that market.

"HOLD YOUR WHEAT" CIRCULAR.

The issuing of the famous circular to farmers advising them to hold their wheat, is now a matter of ancient history. Not so, however, some of the developments respecting the circular itself. Everybody knew that to send out a couple of million circulars cost a neat sum of money; and yet, it was promptly denied by the Alliance authorities that they footed the bill. It has been estimated that the dissemination of the circular cost between \$40,000 and \$50,000; and who paid this sum has been a matter of conjecture. It is now asserted with every appearance of truth that the whole thing was a scheme of Northwestern speculators who had 6,000,000 or 7,000,000 bushels of old wheat on hand and wanted a sharp advance in order to unload. Then they could bear the new crop and buy in at correspondingly low prices. If it is, indeed, true that the speculators furnished the bait, the Alliance readily bit.

EXPORTS OF BREADSTUFFS.

The report of the Bureau of Statistics for July makes a very gratifying showing for our export grain trade. During the month we exported 9,418,775 bushels of wheat, valued at \$9,571,236, against 4,366,554 bushels, valued at \$4,000,918 for the preceding July.

The corn exports in July were 3,051,118 bushels, valued at \$2,052,494, against 6,662,044 bushels, valued at \$2,979,137 in July, 1890. The exports of oats during the month were 20,732 bushels, valued at \$9,896, against 585,448 bushels, valued at \$209,806 during the same month last year.

The barley exports for the month aggregated 264,156 bushels, valued at \$164,383, against 30,195 bushels, valued at \$17,057 for July, 1890. The exports of rye for the month were 235,902 bushels, valued at \$176,288, against 116,791 bushels, valued at \$69,255 for the preceding July.

The exports of breadstuffs during July were valued at \$16,379,291, compared with \$10,733,669 for July last year. During the seven months ending with July we exported breadstuffs valued at \$84,709,598, compared with \$92,777,352 during the same months of 1890.

A LONDON paper knowingly informs its readers that Chicago is destined to become one of the greatest grain growing states of the Union. A Chicago wiseacre thinks that the harvesting of the wild oats crop would easily make the statement true.

Grain Dealers' Associations.

KANSAS AND NEBRASKA GRAIN DEALERS ELEVATOR ASSOCIATION.

President, MASON GREGG, Lincoln, Neb.; *Vice-President*, FRANK LOWER, Council Grove, Kan.; *Secretary*, W. T. CAYWOOD, Clifton, Kan.; *Treasurer*, O. A. COOPER, Humboldt, Neb.

GRAIN SHIPPERS' ASSOCIATION OF NORTH-WEST IOWA.

President, T. M. C. LOGAN, River Sioux; *Vice-President*, H. HANSON, Odebolt; *Secretary and Treasurer*, F. D. BABCOCK, Ida Grove; *Assistant Secretary*, F. G. BUTLER, Schaller.

Executive Committee, E. A. ABBOTT, Des Moines; J. Y. CAMPFIELD, Sac City, and T. M. CATHCART, Kingsley.

ILLINOIS GRAIN MERCHANTS' INSURANCE AND PROTECTIVE SOCIETY.

President, H. C. MOWREY, Forsythe; *Secretary and General Manager*, S. K. MARSTON, Onarga; *Vice-President*, EDWIN BEGGS, Ashland; *Treasurer*, E. R. ULBRICH, Jr., Springfield.

Executive Committee, E. F. NORTON, Tallula.
Committee on Claims, W. B. NEWBIGIN, Blue Mound.

GRAIN DEALERS' ASSOCIATION OF OHIO.

President, E. C. WAGNER, Columbus, Ohio; *Vice-President*, E. M. BENNETT, JR., Urbana; *Secretary*, E. W. SEEDS, Columbus; *Treasurer*, J. W. McCORD, Columbus.
Board of Managers, J. C. HANNUM, Duvalls; J. W. JONES, Radnor; J. P. McALLISTER, Columbus; J. W. WOLCOTT, Conover, and N. R. PARK, Ada.
Legislative Committee, J. W. McCORD, D. McALLISTER, E. W. SEEDS, E. C. WAGNER, W. A. HARDESTY, and E. C. BEACH.

The flax palace at Forest City, Ia., will be opened Sept. 8.

The flaxseed crop is estimated at 15,000,000 bushels, against 13,000,000 bushels last year.

We will be pleased to have readers send us news of their district relating to the elevator and grain trade.

Jerusalem corn is a success in Finney county, Kansas, this year, thus proving that it will grow in wet as well as in dry weather.

The citizens of Plankinton, S. D., have organized a grain palace, to run on the same plan as that of the Sioux City corn palace.

Lindblom, of Chicago, says: "Europeans are hesitating between utilizing their population in war, or letting them starve."

The San Francisco *Journal of Commerce* says: The Monowai takes out some wheat to Australia. This is the beginning of an export movement in grain to our neighbors of the South.

State Grain Inspector Bird Brice of Chicago says it is not true that inspectors cannot keep up with the receipts of wheat. On the contrary, he says, inspectors could do 50 per cent. more than they are now doing.

The new chinch bug remedy by inoculation, discovered in Kansas, has been tried with apparent success in Wisconsin, some of the imported infected insects causing the death of millions of the bugs in a wheat field.

One of the best yields of wheat we have yet heard of was obtained by W. Arthur Mitchell. From a field of twenty-four acres he got 975 bushels, an average of over forty bushels to the acre.—*Democrat, Elkhart, Md.*

A recently invented car scale may be attached to any car and the weight of the contents shown. By this invention the weighing device is permanently attached to the car without any change in the present construction, and requires but a moment to ascertain the weight.

Stocks of wheat in all call board warehouses, San Francisco, Aug. 1, aggregate over 33,000 tons, as against 74,000 tons Aug. 1, 1890. The American ship Shenandoah cleared for Havre July 31 with the largest cargo of wheat on record, being 112,000 centals, valued at \$182,000.

Here is something that can only happen in Kansas. A Kansas farmer stored away 100 bushels of corn. Soon after storing it he sold seventy-five bushels and realized \$7.50. A year later he sold fifteen bushels and realized \$7.50. And last week he exchanged the remaining ten bushels for \$7.50.—*Topeka Journal.*

EDITORIAL MENTION

ANY one having an elevator to let will do well to reply to the advertisement in Miscellaneous Notices.

RATES on grain to Montreal for export will be advanced by the Canadian railroads Aug. 17. This will give the lake carriers more to transport.

P. BIRD PRICE, who has for many years satisfactorily filled the office of Chief Grain Inspector at Chicago, has been reappointed by the Governor.

THE Omaha Board of Trade and the South Omaha Exchange will together give a banquet to the grain and live-stock men of Nebraska at Omaha Aug. 20.

THE Minnesota Warehouse Commissioners gave a hearing at the state capital recently to the grain dealers and producers of the state, to receive petitions for changes in the state grades. No change was made, however.

THE much-talked of grain agency at Kansas City has not yet been established. The grain dealers paid the price asked by the railroads, but the goods have not yet been delivered.

A CARGO of 51,787 centals of rye has been cleared from San Francisco for Antwerp. This is the first cargo of the kind since January, 1890, and serves as additional evidence of the European shortage.

THE Toronto Board of Trade is trying to induce the railroad companies entering that city to provide elevators with bins for single cars, so that a shipper can deliver the identical grain he sells. Every grain center should have such an elevator.

GRAIN dealers wishing to bid on the contract for supplying corn to the posts under the control of the Department of Dakota, U. S. A., can obtain any desired information by addressing Quartermaster John V. Furey, St. Paul, Minn., in whose office the bids will be opened Sept. 1.

A RECIPROCAL treaty has been made with San Domingo by the United States Government, and after Sept. 1 corn, cornmeal, oats, barley, rye, buckwheat, and flour from these cereals, hay, bran and straw for forage from United States ports will be admitted free of duty.

THE A. P. Dickey Manufacturing Company of Racine, Wis., have an order for "a machine which will separate black beans from white beans." They make a mighty good separator, but it will hardly do that. Any one making such a machine will confer a favor by sending description and price to that firm.

BUFFALO merchants are still talking about the erection of transfer houses for car grain at that city, but as yet no contracts have been let. The dealers in that market should not permit this want to go unsupplied. The erection of good transfer houses would result in inestimable benefit to that market.

THE reciprocity treaty between Spain and the United States has been made public, and the transitory schedule goes into effect Sept. 1. After that date oats, barley, rye, buckwheat, and flour of these cereals, will be admitted free of duty into Cuba and Port Rico. The duty on corn and cornmeal will be 25 cents per 100 kilogrammes. The reduction in the duty on wheat

and wheat flour will take effect Jan. 1, 1892. After that date the duty will be 30 cents per 100 kilogrammes on wheat and \$1 on wheat flour.

OUR granaries are again literally "bursting with their loads." On Aug. 12 the Star Elevator at Minneapolis spilled out 60,000 bushels of wheat through its side, demolishing a feed mill adjoining.

LOUISVILLE, KY., is becoming a grain distributing point of importance, and the railroads centering at that point are handling an unusually large quantity of grain. Part of the grain goes through, but the bulk of it is handled by the Louisville elevators.

THEY do things differently in Russia. There, when people perpetrate crop reports, the police promptly arrest the perpetrators. The Russian Government proceeds on the assumption that the crop reporters are generally speculators, and the assumption is correct, even for this part of the world.

VESSELMEN have boycotted Fairport, O., on account of the shortages occurring in cargoes delivered at that port, and will not accept any grain for that port. If grain shippers would organize and take similar steps against those terminal elevators which report the largest shortages, this imposition might be materially reduced.

IT has been suggested that elevators, with bins for single cars, be erected at Buffalo, N. Y., for transferring grain, and that five days' storage be allowed all grain, the charge for transferring being one-half cent per bushel. This relates to grain received and shipped by rail only. We can only say it has been suggested; only this and nothing more.

THE members of the Farmers' Alliance owned all the threshing machines in the vicinity of White Lick, Ind., and refused to thresh the grain of a neighboring farmer because he would not join the Alliance. This is a fair sample of the farmers' narrowmindedness. It does not extend solely to his dealings with the grain buyer and the miller, but to his brother farmers as well.

IT is reported that the Omaha Board of Trade and the grain dealers of Nebraska desired the Governor to appoint L. B. Shepherd state inspector of grain, but that official declined to accept their recommendations and appointed Samuel S. Blanchard of Arlington. It is to be hoped that Nebraska's inspection department will not be run for the mere accommodation of politicians as the Missouri department seems to be.

JEROME TWICHELL & Co., dealers in iron roofing, shutters, etc., of Kansas City, Mo., send us a copy of the second edition of their 1891 catalogue and write us that "We are quite proud of the fact that a second edition was necessary this year. This indicates, we think, a very heavy business for us this fall and we hope to furnish corrugated iron to cover many million bushels of the great wheat and corn crop this season."

DAME RUMOR has it that Duluth elevators will not be operated as public warehouses on the new crop; that the proprietors will not take out licenses, but will operate their elevators as private houses, buy wheat on their own account, and do a mixing business. Such a thing is possible but not probable. If Duluth's elevator men were to stop storing the public's wheat it would greatly reduce the city's trade. A demand for public storage elevators exists and will be supplied.

EVERY grain shipper in this country should read "Observer's" article on "How Shippers Make Mistakes." No writer is better prepared to handle this question than "Observer," and we doubt if any one could improve upon his able handling of the subject. Shippers are undoubtedly very careless, and many of their misunderstandings

with the terminal elevator men are due to their own carelessness in weighing out. No elevator weighman can be too careful.

P. D. ARMOUR of Chicago has organized an elevator company and leased the five elevators on the C., B. & Q. R. R. in this city. The elevators have a total capacity of 6,500,000 bushels. Mr. Armour cannot, and it is not his desire to control the grain trade of Chicago, as some of the sensational sheets have claimed.

CONTRADICTORY reports come from Berlin as to the intentions of the German Government with regard to the duty on wheat. Two dispatches, both sent the same day, contain diametrically opposite statements. One says that Von Caprivi is determined to maintain all the duties as they are, while the other says that the duty on wheat will be reduced or remitted altogether on Sept. 1.

THE export wheat trade of New Orleans is flourishing, and the managers of rail lines centering at that city are indulging in much talk about increasing the storage capacity of the city. The growth of the grain trade of the Crescent City has frequently been retarded by lack of handling facilities, and it is time the interested parties should do more than talk.

A STRONG company has been organized with a large capital, to build steamships and carry our trade with South and Central American states, which is expected to be greatly increased. These ships will run from all the principal American ports on the Gulf. With increased transportation facilities our export trade in grain and grain products will surely be increased.

SOME time ago the directors of the Chicago Board of Trade were asked to declare the new grade of wheat, No. 2 hard winter, or Turkish wheat, deliverable on contract, but declined. Then 100 members of the Board asked a vote of the full Board on the proposition to make the grain regular after Sept. 1. An amendment was then proposed that the rule, if adopted, take effect Sept. 1, 1900, and the amendment was adopted, thus practically defeating the object of the original amendment.

ADVICES from Chattanooga, Tenn., state that the farmers are holding their wheat and the millers are forming a league to purchase Western wheat. During the first week in August wheat advanced $7\frac{1}{2}$ cents per bushel and flour 25 cents per barrel. Tennessee millers should advertise in the AMERICAN ELEVATOR AND GRAIN TRADE for the kind of wheat they want, and they would soon receive a bountiful supply of samples to choose from. In fact, all millers would find it to their advantage to do so.

THE farmers of Canada, like those of this country, seem to delight in being swindled by unreliable traveling vendors of seed grain, in preference to buying of the established grain buyer, who is directly interested in their having a good crop of a good quality. A writer in the *Toronto Globe* says: "Thousands of dollars have been lost by the farmers of Canada in the frauds that have been practiced upon them by the traveling vendors of seed grains. The memory of the gigantic Bohemian oats and Red Lyon wheat swindles are fresh in our minds, and these are only two of the many frauds that have been practiced upon the farmers in this line."

THE Milwaukee Chamber of Commerce has amended its rules governing the grading of grain so as to provide a new contract grade of winter wheat. The amendment provides that No. 2 hard winter wheat shall be sound, reasonably clean and composed of not less than 90 per cent. of the variety of wheat known as Turkish winter. The rules of the exchange are also amended so that "All contracts for the purchase or sale of wheat, unless otherwise specified, shall be understood to be for No. 2 wheat, comprising No. 2 red

winter and No. 2 hard winter wheat, and these grades, or the higher grades of these varieties, either in whole or in part, shall be received in fulfillment of such contracts. This will make Milwaukee a safer market for the country shipper to sell in and will undoubtedly increase the receipts of that market.

THE receipt of a handsomely bound copy of the new catalogue of S. Howes of Silver Creek, N. Y., "The Eureka Grain Cleaning Machinery, Where and How it is Made," reminds us that we omitted to say in our last issue, that every user of grain cleaners who had not already received a copy can obtain one by writing for it. The intention of Mr. Howes was to place a copy in the hands of every user in the country, and if any one has been overlooked, or the copy sent has gone astray, Mr. Howes will be pleased to supply the omission.

THE farmer agitators are busy in Kansas trying to induce the wheat producers to hold as much of their grain as possible for higher prices. If prices decline instead of advancing, as these unposted cranks predict, the dealers in grain and options will be charged with innumerable crimes, and of course the government and every one but the unprincipled demagogues who are to blame, will be censured. If Kansas farmers hold part of their wheat the railroads of that state are not likely to be troubled with scarcity of cars, as was expected.

NEBRASKA railroads expect to have a car famine of long duration, and are preparing to supply the wants of shippers as well as possible with their present supply of cars by the adoption of rules securing the equitable distribution of cars. The State Board of Transportation also proposes to adopt rules, and will undoubtedly be as unreasonable and arbitrary as usual. The grain dealers of the state should inform the members of the Board of their needs before the rules are adopted, as they may thereby save themselves much trouble.

THE effort of the Canadian Government to compel grain to be transhipped at Canadian ports by charging 18 cents per ton canal toll more on that transhipped at American ports than at Canadian ports is not having the desired effect, and much grain is going right past Kingston to Ogdensburg. The Ogdensburg Transit Company are paying full canal tolls and transshipping all their grain at Ogdensburg under the hope that the Canadian Government will refund their extra toll outlay when the season is over or when a looked-for understanding has been arrived at between the two governments.

AT Pittsburg, Pa., recently a boy was shot while stealing grain from cars. He still lives, but will probably steal no more grain from cars. His plan for securing the grain was to bore a hole in the floor of the car with an auger and hold a basket under the opening until filled. The basket full would not be missed, but the many bushels that would leak out at that hole before the car arrived at destination would be a heavy loss for some one. It is not known who did the firing. At this rate the carriers will soon have to provide steel tanks for transporting grain.

RECENTLY the representatives of a number of firms engaged in the grain and stock business in Northwestern Iowa met at Sioux City and decided to bring suits against the Chicago & Northwestern Railroad Company to recover the amount paid in excess of the rate paid by other shippers for the same or a longer haul. The company discriminated against these shippers by giving rebates to others. The Federal courts have decided that shippers can recover the difference between what they paid and the lowest rate paid for the same haul, and the shippers propose to vigorously prosecute the road and recover all they can. Other shippers along this and other roads in Iowa are also preparing to bring similar suits. The day of unfair, discriminating rates which

build up the business of one dealer at the expense of another should be of the past only.

REFERENCE to the card of the Thayer-Font Commission Company in this issue, successors to C. H. Thayer & Co., will acquaint shippers with the fact that this firm has established houses at four different points, Chicago, New Orleans, Memphis and Kansas City. Mr. C. H. Thayer now makes his headquarters in this city, while Mr. Font is resident partner at New Orleans. This firm is the oldest export brokerage firm at New Orleans, and their experience in the business has enabled them to build up a large business through their acquaintance with ship agents. They are prepared to handle all business intrusted to them, either in the way of consignments or selling on brokerage to arrive.

KANSAS farmers are organizing shipping associations for the purpose of buying, handling and shipping wheat. The companies already organized are the Clyde Farmers' Alliance Shipping Association, capital stock \$250,000; the Farmers' Purchasing and Shipping Association of Plainville, capital \$10,000, and the Esbon's Farmers' Shipping Association of Esbon, capital stock \$20,000. They propose to hold farm products until they can obtain satisfactory prices. It is claimed that from one to ten companies will be organized in each county, and, of course, it is claimed that the services of the middlemen will not be required. This is aimed not alone at the country buyers but at the receivers at grain centers also. Like all other co-operative schemes of the farmers it will prove a dismal failure.

GRAIN TRADE OF BUFFALO.

The eastward movement of flour and grain from the West through Buffalo for the month of July, 1891, according to the *Milling World* of Buffalo, shows a decrease of 27,984 barrels in the receipts of flour and a decrease of 208,765 bushels in the receipts of grain, estimating flour as wheat, as compared with the same month last year. The following tables show the imports of flour and grain into Buffalo by lake for the month of July and from the opening of navigation to July 31, 1891, compared with those for previous years:

FOR THE MONTH OF JULY.			
	Flour, barrels.	Grain, bushels.	Grain, Inc. Flour, bu.
1891.....	537,065	11,426,290	14,111,615
1890.....	565,049	11,493,135	14,318,380
1889.....	563,644	8,462,225	11,280,445
1888.....	691,677	7,905,350	11,363,741
1887.....	526,208	7,924,916	13,555,656
1886.....	641,910	10,014,442	13,223,992
FROM OPENING TO JULY 31.			
	Flour, barrels.	Grain, bushels.	Grain, Inc. Flour, bu.
1891.....	2,229,045	37,745,473	49,240,698
1890.....	2,013,667	46,468,168	56,536,503
1889.....	1,728,381	35,110,449	43,752,354
1888.....	1,947,070	28,945,965	38,680,715
1887.....	1,522,839	39,469,056	47,063,251
1886.....	1,935,778	31,435,585	41,114,475

GRAIN SACKS FOR THE PACIFIC COAST.

Californian importers of grain bags made provision in 1890 for a crop 40 per cent. greater than that of 1889. This made a surplus of 20,000,000 bags. October, November and December (1889) rains, however, showed prospects of a large crop, and a lively business in bag "futures" consequently ensued. The inevitable overshipments of bags resulted in a surplus by January, 1890, of 40,000,000 bags. The weather did not, however, realize anticipations, and only 75 per cent. of the bags on hand were utilized. To save loss in this emergency the dealers "pooled their stocks, buying up outside lots," thus controlling prices for the season. Ultimately 11,000,000 bags remained over for this year's crop, to which must be added purchases from Calcutta of some 13,000,000 bags, laid down on arrival at San Francisco from $6\frac{1}{2}$ to $7\frac{1}{2}$ cents.

Fluctuations subsequently took place resulting in further importations, and ultimately a table before us now shows as under:

Surplus carried over June.....	11,000,000
Importation by steamer and sailing vessel.....	21,000,000
Make of San Quentin & Cal. Jute Mill Company....	5,000,000
Total.....	37,000,000

It is believed that these figures will about meet the requirements of the 1891 crop, without much surplus when the bags are filled with grain.

ELEVATOR

GRAIN NEWS

A rice mill is to be built at Ocala, Fla.
 An elevator will be built at Amherst, Neb.
 An elevator is being built at Douglas, Man.
 Another elevator is to be built at Virden, Man.
 N. Bentz has sold his elevator at Nokomis, Ill.
 A new elevator has been built at Jackson, Minn.
 A starch factory is to be built at Spokane, Wash.
 E. Young, grain dealer at Ames, Ia., has sold out.
 A cotton-seed oil mill will be built at Marietta, Ga.
 The grain elevator at Cartwright, Man., will be sold.
 A new elevator is being built at McCool Junction, Neb.
 Colin Wible & Bro. are building an elevator at Essex, Ont.
 Hubby & Gorman will erect a grain elevator at Waco, Tex.
 John D. Glade has sold his grain business at Merna, Neb.
 A brewery and malt house is to be built at Victoria, B. C.
 The Martin Elevator at Minneapolis, Minn., has been closed.
 The Martin-Mitchell elevator at Morris, Man., has been started.
 Bartlet & McDonald are building an elevator at Windsor, Ont.
 Send us news of your district of interest to our readers.
 An elevator is to be built at Roland, Man., by the farmers.
 L. N. Blood of Gordon, Kan., is building a 5,000 bushel elevator.
 M. B. Phillips is building a cotton-seed oil mill at Lake-land, La.
 James McCabe has sold out his grain business at De-fance, Ia.
 F. F. Cole, grain dealer at Kingston, Ont., has removed to Toronto.
 The Farmers' Alliance has completed an elevator at Beloit, Kan.
 Mansur & Sons are building a starch factory at New Limerick, Me.
 The Berlin Weiss Beer Company has been incorporated at Chicago, Ill.
 W. P. Chandler will build a cotton-seed elevator at Farmerville, La.
 The Richmond Brewing Company is building a brewery at Richmond, Va.
 A linseed-oil mill and a starch factory are talked of at Watertown, S. D.
 Miller & Co., warehousemen at Toronto, Ont., have made an assignment.
 Lewis & Hanford, seed dealers at Louisville, Ky., have dissolved partnership.
 The Broom Manufacturing Company has been incorpo-rated at Omaha, Neb.
 A stock company has been organized to build a brew-ery at Vicksburg, Miss.
 An elevator will be built at Jolietville, Ind., by A. J. Sold & Son of Noblesville.
 R. D. Elwood & Co., grain dealers at Pittsburg, Pa., have dissolved partnership.
 Kircher, Bigler & Co., dealers in grain and lumber at Larrabee, Ia., have sold out.
 The Northern Pacific Elevator Company is building an elevator at Farmington, Wash.
 Shippers in some sections report that they cannot get enough cars to load their grain.
 An elevator will be built at Moosomin, Assa., by a stock company now being organized.
 L. J. Simpson is building an elevator at Chicago, to be 70x216 feet and to cost \$70,000.
 James Rowe, grain dealer at Wilton, Ia., has leased an elevator at Tipton for five years.
 The grain elevators of Duluth, Minn., have, it is said, a capacity of 21,000,000 bushels.
 A grain elevator will be built at Shippensburg, Pa., by the Cumberland Valley Railroad.
 An English syndicate has bought the properties con-trolled by the glucose trust at Buffalo, Glencove, Daven-

port and Marshalltown, Ia., and Waukegan, Chicago, Peoria and East St. Louis, Ill.

N. P. Turner & Co. have ordered Eureka Separators for their new elevator at Havana, Ill.

Vorhes Bros. have put in another of the Dickey Clean-ers (an overblast) at Williams, Ia.

T. A. Caulfield, grain dealer at McGregor, Tex., has been succeeded by Sealy & Early.

J. W. Hansell, grain dealer and proprietor of a general store at Hansell, Ia., has sold out.

G. Caesar & Co., grain dealers at Portland, Ore., have been succeeded by J. R. Cameron.

The Chester Brewing Company is being organized at Chester, Pa., with \$50,000 capital.

L. A. Williams, dealer in grain and coal at Garfield, Ia., has been succeeded by J. R. Baker.

The Ogilvie Milling Company has commenced the erec-tion of an elevator at Hartney, Man.

The Alliance Distilling Company has been incorporated at Peoria, Ill., with \$200,000 capital.

A 25,000-bushel elevator is being built at Pilot Mound, Man., by Chalmers Bros. & Bethune.

It is expected that three elevators will be built at Na-pinka, Man., to handle the new crop.

Newton & Fricke, dealers in grain and hides at Spring-field, Mo., have dissolved partnership.

M. Slattery, dealer in hay and wood at Galena, Ill., has been succeeded by M. Slattery & Son.

L. & A. Linebarger, grain dealers at Oxford, Ia., have been succeeded by Wolf, Marvin & Co.

The Union Brewing Company will rebuild its brewery at Utica, N. Y., which burned recently.

A new grain elevator will be built at Avoca, St. Clair county, Mich., in time for the fall trade.

Of the receipts of new wheat at Philadelphia up to Aug. 1, none had graded lower than No. 2 red.

The Anderton Brewing Company has been incorporated at Beaver Falls, Pa., with \$50,000 capital.

Jas. Rowe of Wilton, Ia., is putting in a new dump and improving his facilities for receiving grain.

The Hudson Bay Company is increasing the capacity of its elevator at Winnipeg by 30,000 bushels.

J. M. Bailhache & Co., dealers in hay and produce at Seattle, Wash., have dissolved partnership.

A 200,000-bushel elevator is to be built on the tracks of the Great Northern road at St. Cloud, Minn.

A broom factory is to be built at Myrtle Springs, Tex., by the Texas Land and Industrial Company.

The Solomon Malting Company has been incorporated at Hamilton, O., with \$100,000 capital stock.

New jute mills are being built at the San Quentin State Prison by the California State Prison directors.

K. Buland, dealer in grain and stock at Linn Grove, Ia., has been succeeded by Buland & Erickson.

Work has been commenced on the elevator of the Farmers' Elevator Company at Neepawa, Man.

The Winnipeg grain inspector inspected 10,200 cars of wheat during the crop year ending June 30, 1891.

The Heren & Gabler Brewing Company has been in-corporated at Chicago, Ill., with \$100,000 capital.

Simpson & Robinson, elevator builders of Minneapolis, are building several country houses in Minnesota.

West, Andress & Co. are putting in another of the A. P. Dickey Cleaners at their Mendota, Ill., station.

Edward Putnam has recently added two lines of the Harrison Conveyor to his elevator at Rossville, Ill.

A 60,000 bushel elevator has been completed at Wichita Falls, Tex., by the Wichita Roller Mill Company.

After Sept. 1 the contract grade of wheat at Duluth, Minn., will be No. 1 northern, instead No. 1 hard.

The Consolidated Milling Elevator and Power Compa-ny has been incorporated at Chippewa Falls, Minn.

The Waynesboro Oil Mill & Fertilizer Company at Waynesboro, Ga., is improving its cotton and oil mill.

F. W. Rottger & Co. of Mt. Sterling, Ill., have started their new elevator. It is fitted with Eureka Separators.

The Farmers' Co-operative Warehouse Association of Wasco, Ore., has increased its capital stock to \$10,000.

Jas. Livingston & Co. of Yale, Mich., are putting in a Dickey Overblast at Crosswell, Mich., for cleaning flax.

A grain elevator and flour mill will be built at Buffalo, Minn., by Mr. Carlson of Kokato. It is to cost \$15,000.

Piersol & Van Kirk, dealers in grain, lumber and coal at Swaledale, Ia., have been succeeded by F. S. Roberts

Joyner & Elkington are building a 10,000-bushel ele-vator at Fort Qu' Appelle, Assa., in connection with their mill.

The work of building the farmers' elevator at Carman, Man., has been commenced. The house will be 40x50 feet and 88 feet high, with a capacity of 60,000 bushels.

The president of the company is W. H. Clendenning and secretary and manager David Pritchard.

Bradnax & Co., export dealers in grain at New Or-leans, La., have been succeeded by a firm of the same name.

Barnett & Record, the Minneapolis elevator build-ers, will convert the Pettit Mill into a 250,000-bushel ele-vator.

Alex Fraser at Aurelia, Ia., and W. H. Barney of Agra, Kan., have put in Dickey Manufacturing Company Cleaners.

Haralson, Moody & Co., dealers in grain and mer-chandise at Atlanta, Ga., have been succeeded by M. & E. Haralson.

Bender Bros. & Co., dealers in grain and stock at Spencer, Ia., have been succeeded by the Bender Bros. Company.

Simpson & Robinson, elevator builders of Minneapolis, Minn., have erected a 30,000-bushel cleaning elevator at Roland, Ia.

The Fort Smith Oil and Cotton Compress Company is increasing the capacity of its cotton seed oil mill at Ft. Smith, Ark.

Honstain Bros., elevator builders of Minneapolis, Minn., have the contract for repairing the Union elevator at Minneapolis.

Honstain Bros. of Minneapolis, Minn., are building an elevator of 10,000 bushels' capacity for F. A. Norish at Hunter, N. D.

Honstain Bros., elevator builders of Minneapolis, are building a 30,000 bushel elevator at Argusville, N. D., for B. B. Man.

A 30,000-bushel elevator is being built at Anthony, Kan., in connection with the new mill of the Poorman Mill Company.

The Northern Central Railroad Company has just completed its 1,000,000-bushel elevator at Canton, near Baltimore, Md.

Marsh, White & Co., dealers in grain and feed at Brooklyn, N. Y., have been succeeded by a new firm of the same name.

Mickleberry & McClendon, dealers in grain, hay, and groceries at Atlanta, Ga., have been succeeded by J. J. & J. T. McClendon.

Cuthbert & Thomas, dealers in grain and agricultural implements at Newell, Ia., have been succeeded by John-son Bros. & Krog.

Simpson & Robinson, the elevator builders of Min-neapolis, are putting the iron roof on a new 750,000-bush-el house in Chicago.

A cotton-seed oil company has been organized at Con-way, Ark., with \$15,000 capital, and J. A. Spence as sec-retary and treasurer.

Toncray & Bryan, grain dealers at Omaha, Neb., sus-pended business July 21. Difficulty in making collections is the cause assigned.

The Schwartz Bros. Commission Company of St. Louis, Mo., has nearly completed its elevator, and it will soon be ready for business.

A 1,000,000 bushel grain warehouse is talked of by the people of Bearice, Neb., in which to store grain under the new warehouse law.

E. S. Greenleaf & Co. of Jacksonville, Ill., are building an elevator at Woodson, and have bought Eureka Sepa-rators for its equipment.

A stock company composed of merchants and farmers is making arrangements to buy the O. T. Hubbard grain elevator at Talmage, Neb.

J. P. Evans, dealer in grain and coal at Spence, Ia., has entered into partnership with the Bender Bros. Compa-ny, in the same business.

The City Elevator Company of Minneapolis, Minn., is about to build houses at Northfield, Cannon Falls, Ran-dolph and Fairbault, Minn.

A 200,000 bushel elevator is being built at Toledo, O., in connection with the Toledo Flouring Mill. It will be 50x150 feet and 70 feet high.

A 35,000 bushel elevator has been completed at Cyn-thiana, Ky., in connection with the "Licking Valley Mills" of Riggs, Garnett & Co.

Adam Allison, a grain dealer and banker of Belmont, Ont., left for parts unknown July 18, leaving his affairs involved to the extent of \$20,000.

Simpson & Robinson, elevator builders of Minneapolis, are putting in foundations for a barley clearing house for H. J. O'Neill & Co. at Wabasha, Minn.

Parrish & Lindsey are enlarging to 60,000 bushels' ca-pacity their elevator at Brandon, Man., which they re-cently purchased of Edgar & Campbell.

A 100,000-bushel elevator is being erected in Kansas for F. H. Peavey & Co. by Simpson & Robinson, elevator builders and contractors of Minneapolis.

A potato starch factory is being built at Fairfield, Me., by E. E. Hubbard, T. L. Marshall and L. K. Cary & Co. The buildings are five in number, a potato house 36x40 feet, vat house 38x50 feet, dry house 31x100 feet, packing

house 20x70 feet, and boiler house 12x50 feet. The factory will grind 1,500 bushels of potatoes a day, and turn out 250 tons of starch a year.

The Southern Prepared Flour and Grain Company has been incorporated at Charleston, S. C., by J. F. Lillenthal and others, with \$60,000 capital stock.

Simpson & Robinson, the Minneapolis elevator builders, are building a 150,000 bushel cleaning house at Dayton, Ia., for Rothschilds & Co. of Chicago.

The wheat shipments for the season from Wawanesa, Minn., end with a total of 250,000 bushels, a good showing for a new market with strong competition.

The St. Anthony Elevator Company has completed its 300,000-bushel cleaning house at Minneapolis, Minn. Barnett & Record of that city had the contract.

A 50,000-bushel elevator is being built at Flemingsburg, Ky., in connection with the flour mill at that place, owned by W. S. Fant, and will soon be finished.

The Mulford Elevator Company at Minneapolis, Minn., has been re-incorporated, increasing its limit of liability to \$200,000 and the number of directors to seven.

Honstain Bros., builders of grain elevators of Minneapolis, are building an elevator of 225,000 bushels' capacity for S. S. Linton & Co. at Minneapolis, Minn.

Honstain Bros. of Minneapolis, Minn., are erecting an elevator at Wahpeton, N. D., of 16,000 bushels' capacity for the St. Anthony and Dakota Elevator Company.

The Union Elevator Company is building a 75 barrel flour mill at Prospect, O., using machinery furnished by the Nordyke & Marmon Company of Indianapolis, Ind.

The Farmers' Alliance Warehouse Company of Palouse City, Wash., has decided to build a steam elevator to increase its facilities. It will be 40x90 feet and 30 feet high.

The Belgrade Grain and Produce Company, dealing in grain and general merchandise at Belgrade, Mont., has been succeeded by the Belgrade Mercantile Company.

Honstain Bros. of Minneapolis, contractors and builders of grain elevators, are building an elevator of 15,000 bushels' capacity for Stair, Christensen & Co. at Stewart, Minn.

Two carloads of long berry wheat were recently shipped from Ohio to Buffalo, N. Y., where it was graded No. 1. This is the first receipt from Ohio of that grade in three years.

Guth & Marx, grain dealers and proprietors of a general store at Kewaskum, Wis., made a voluntary assignment Aug. 6 to B. S. Potter of Chicago. Liabilities \$8,000.

The new elevator which is in process of construction on the site of the burned Wells elevator at Buffalo, N. Y., will have a capacity of 500,000 bushels, and is to cost \$130,000.

The Brandon Warehouse and Rink Company has been incorporated at Brandon, Man., by A. Kelly, A. C. Frazer, John Hanbury, D. McG. Stewart and F. G. A. Henderson.

Philip D. Armour has, it is reported, leased the elevators of the Chicago, Burlington & Quincy Railroad at Chicago. This system has a capacity of more than 6,000,000 bushels.

Meyer & Bulte of Clinton, Mo., have built an elevator in connection with their White Swan Mill. It is five stories high, 36x85 feet, and has a storage capacity for 75,000 bushels.

Knerr-O'Brien Cotton-seed Cleaning and Linting Company has been incorporated at New Orleans to manufacture cotton batting and to clean cotton seed. Capital stock \$100,000.

The appointment of weighmasters has been requested by those interested in the grain trade of Western Canada, and measures are being taken to secure the passage of a bill to that effect.

The first car of the new crop of oats was received at Baltimore July 29, and sold for 45 cents. It was from Northern Illinois, and was prime white and in very fine condition for new.

The first load of new wheat was received at Hamilton, Ont., July 30. The wheat, which was of the white variety, testing 62 pounds, was bought by W. B. Robson, miller, for 95 cents.

The North Dakota Elevator Company is building an elevator at Hector, Minn., to be of 30,000 bushels' capacity. When completed the elevator capacity of the town will be 160,000 bushels.

Roblin & Atkinson, grain dealers at Winnipeg, Man., have dissolved partnership. Arthur Atkinson has formed a partnership with D. W. Cumming under the firm name Arthur Atkinson & Co.

The Crescent Elevator, being erected at Kansas City, Mo., is nearly completed. The corrugated iron used in covering this structure was furnished by Jerome Twitchell & Co. of Kansas City.

Lamson Bros., who lost money in corn deals in November, 1889, some time ago brought suit against Boyden & Co., grain commission dealers of Chicago, for \$42,000, claiming that the speculations had been made through the latter firm. Boyden & Co. refused to comply with

the order of the court directing them to produce their books, and the court entered a rule for contempt, but an appeal was granted and the case will be further dragged through the courts.

Eames & Town, grain dealers at Keene, N. H., will enter the milling business, having purchased a site on the Ashuelot River near Ashuelot, on which they will build a water power grist mill.

The 25,000-bushel elevator at New Prague, Minn., owned by the Scandinavian Elevator Company, which failed recently, has been purchased by James Quirk of Waterville, who will run it.

C. A. Parsons of Boston, Mass., Crossland & Grimsley of Sumner, Mo., J. A. Irving of Anita, Ia., and Ira Conger of Galva, Ia., have put in A. P. Dickey Manufacturing Company Cleaners.

The Peoria Commission Company has been incorporated at Peoria, Ill., to buy and sell grain and produce for others. Capital stock, \$10,000; incorporators, M. Cohn, H. Schagrim and Charles Weltart.

The National Starch Company contemplates building a large starch factory at Des Moines, Ia., where corn can be had cheaply and in large quantities. Extensive elevators will be built for the storage of corn.

The Jamison grain elevator at Talmage, Neb., was sold July 25 to a farmers' stock company for \$4,200. W. P. Clark is the president of the company. It will be run in the interests of the Farmers' Alliance.

C. W. Carroll at Media, Ill., the Alliance Grain Company, at Botna, Ia., and Thos. Duncan at Indianola, Neb., have adopted and put in the A. P. Dickey Manufacturing Company Giant Grain Cleaners.

The Amboy Milling and Elevator Company has been incorporated at Amboy, Neb., with \$25,000 capital stock. Incorporators, Charles H. Potter, George W. Hawley, J. M. Sellars, C. H. Frisbie and C. V. Potter.

Charles Mory of Heid & Mory, owners of elevators at Appleton, Hortonville and Van Dyne, Wis., has bought out the interest of his partner, Peter Heid, who is now in Europe, and will conduct the business himself.

The Nordyke & Marmon Company of Indianapolis, Ind., has shipped cleaners and other machinery complete to equip the two new elevators being built at Pendleton, Ind., one by B. F. Aliman and the other by A. B. Taylor.

R. F. Lyons, the elevator man at Carberry, Man., has begun suit against the Manitoba Milling Company, for \$4,000 due for storage, and has attached 7,000 bushels wheat owned by the company, to levy upon in the event of a decision in his favor.

A new 100,000 bushel elevator has been built and put in operation by the Minneapolis Grain and Feed Company on the site of the Diamond Elevator at Minneapolis, which was burned a few months ago. A feed and corn-meal mill has been put in.

The Lewis-Sharpe Commission Company of St. Louis, Mo., has just completed a 100,000-bushel elevator on the Missouri Pacific tracks in that city. It is fitted with all modern improvements and conveniences and can handle 80 cars a day, 40 each way.

A good opening for an elevator business exists at Emporia, Kan. There is no elevator in or near Lyon county to handle the crop of that section of the state, amounting to 4,000,000 bushels of corn, half million bushels wheat and 800,000 bushels oats.

William W. Alcorn & Co., grain dealers at Philadelphia, are defendants in a suit for \$64,396, begun July 23, by the Third National Bank. The money in question represents 58 promissory notes indorsed by the firm, and also their overdrawn bank account.

An elevator will be built at Rushford, Minn., by a recently organized company, with \$10,000 capital stock and the following officers: President, H. M. Smith; vice-president, L. Tayland; treasurer, H. H. Henderson, and secretary, T. Tireland; directors, the above and L. Knudson.

The Northern Dakota Elevator Company will build elevators at Johnstown, Elliott and Oberon, N. D., and Staples, Hector and Waconia, Minn. These houses will be from 20,000 to 25,000 bushels' capacity. The Central Elevator at Minneapolis will be operated as a terminal house.

The American Fiber Company is building a flax mill at Austin, Minn., on a 25-acre site given by the city. The mill will be 40x80 feet, two stories high, with retting and chemical tanks, and four storehouses to each hold 500 tons of flax straw, of which 10,000 tons will be consumed annually.

Kansas City grain dealers are uneasy on account of the energy displayed by Omaha men in their efforts to make Omaha a great grain market. They publicly acknowledge that Kansas City will have to hustle to prevent Omaha from wresting from them the bulk of the Western and Southwestern grain trade. The superior location of Omaha renders it a most dangerous rival of Kansas City. — *Omaha Republican*.

Conrad Geise is building an elevator at Council Bluffs, Ia., to cost \$35,000. It will be of brick and will have eight bins 40 feet deep, with a combined capacity of 128,000 bushels. The engine room will be 18x32 feet and boiler room 20x32 feet. The main building is to be 35x120 feet, 60 feet high, with a cupola 75 feet high. Seelye, Son & Co. of Fremont, Neb., are doing the work. Mr.

Geise will remodel his old malt house and build a new one to cost \$400,000. This will be 53x93 feet and five stories high.

Ransom W. Dunham of the grain commission firm of R. W. Dunham & Co. of Chicago, which suspended business recently, has paid his creditors 50 cents on the dollar, and given notes for the balance payable in one and two years, in accordance with the settlement previously arrived at.

E. N. Offutt & Co. of Georgetown, Ky., have just completed a 100,000-bushel elevator. It is now in successful operation and doing a large business. Plans and superintendence were furnished by the Chase Elevator Company of Chicago, and all the machinery came from Chicago shops.

The A. P. Dickey Manufacturing Company's Overblast Suction Separators are going into the elevators of the Crowell Lumber and Grain Company at Bancroft, Neb., Wm. Broeckert & Co., and Hollensteiner & Mueller at Kiel, Wis., and the La Moure Milling Company at La Moure, N. D.

O. W. Crabbs, grain dealer at Muncie, Ind., has been suffering losses of ten to thirty bushels wheat on each carload shipped from Shindeler Station. The cars were watched, and on the night of Aug. 6 Arthur Down and Silvia Sanders were caught in the act of stealing from the cars and placed in jail.

The Farmers' Elevator Company at Cokato, Minn., at its annual meeting recently, declared a dividend of 62 per cent. The total dividends since its incorporation, two years ago have amounted to 126 per cent. Here is an opportunity for the oppressed farmers to howl about the extortion of the bloated monopolists.

S. S. Sprague & Co. of Providence, R. I., have about finished the addition to their mill and elevator at Deerfield, Mass. They now have the largest feed mill and elevator in Massachusetts. Plans were furnished by the Chase Elevator Company of Chicago, and most of the machinery was shipped from Chicago.

The A. P. Dickey Manufacturing Company are putting in Quadruple Separators into the elevators of Geo. A. Seaverns (Mabbatt), Minnesota Elevator on Goose Island (Armour) at Chicago, Dale Nessly & Co.'s mill at Udall, Kan., the Woodman & Ritchie flax elevator at Omaha, and the Pillsbury elevator at Minneapolis.

The wheat crop in Southwestern Indiana is immense this year. In Gibson county there will be 3,000,000 bushels, an average of over 33 bushels to the acre. Posey county will probably produce 2,000,000, Vanderburgh county nearly as much, Pike county 1,000,000, Daviess county 2,000,000, and Knox county 2,500,000.

The Armour Elevator Company has been licensed by the Circuit Court at Chicago to transact business as a public warehouseman of "Class A," being the manager of the Burlington elevators "A," "B," "C," "D" and "Annex," located in Chicago. Philip D. Armour is president and Philip D. Armour, Jr., is secretary and treasurer of the company.

C. C. Wolcott, once connected with the former Alliance Elevator Company of Minneapolis, is suing the Minneapolis and Northern Elevator Company for \$15,000 on account of a failure to fulfill a contract. Wolcott, a wheat buyer at the time, in December, 1885, agreed for a consideration of \$5,000 annually, not to buy wheat in Dakota north of the Northern Pacific road. He has received \$10,000, and claims a balance of \$15,000.

There is at least one English syndicate in this country which does not pay. The public warehouses in Chicago, controlled by a British company, have a capacity for storing 6,000,000 bushels of grain, and they contained only 264,589 bushels according to the last report. It is such a common thing for Kansas City to receive that much grain in a single day, that nobody ever thinks of getting excited about it. — *Kansas City Star*.

H. Strauss, Bros. & Co., maltsters at Baltimore, Md., made an assignment June 29, to William A. Fisher, Simon Rosenberg and Henry L. Straus. The firm is composed of Levi and Joseph H. Straus, and has done business in Baltimore for more than half a century. The recent failures of Solomon Straus and of Samuel Barth & Co., caused the failure of H. Strauss, Bros. & Co., who had indorsed the paper of the other firms. The liabilities are \$360,000; assets \$650,000.

Stutler & Son, with their force, are building what is known as a "dump" at the elevator of J. S. Rowe, our popular and pushing grain buyer. This "dump" is simple enough, and will be a boon to the farmers who have grain to market here, and will also be the means of bringing farmers to this market who probably seldom come to this place. This dump will be ten feet wide and forty-six feet long, situated on the north side of the elevator, where the farmers now unload their wagons. There will be no shoveling of grain hereafter, nor any scaring of teams by the engines as they pass. A raised platform will be built, upon which the farmer drives his load, and by the manipulation of a lever the hind wheels are lowered, the front ones elevated to the degree that by pulling out the end-gate of the wagon-box the grain descends into bins beneath and is then elevated. There will be four of these bins, each receiving its own kind of grain. By this method Mr. Rowe will be enabled to handle many times more the amount of grain per day than heretofore, and the farmer will not have to sweat a shirt wet in unloading, and can also sell, unload and return home in the same length of time as it has heretofore taken him to unload by means of a shovel. — *Wilton (Ia.) Review*.

Fires, Casualties, Etc.

Coleman's distillery at Lincolnton, N. C., was burned recently.

A brewery at Spanish Ranch, Cal., was recently burned. Loss \$10,000.

A grain elevator at Butler, Mo., was burned July 16. Loss \$14,000.

The new elevator at Washburn, Wis., was damaged by wind recently.

A. Young & Co., brewers at Vancouver, Wash., have suffered loss by fire.

A flax mill at Belmont, Ont., owned by Smith Bros., was burned recently.

Werner's brewery at Mechanicville, N. Y., was burned July 21. Loss \$30,000.

The brewery of the Utica Brewing Company at Utica, N. Y., has been burned.

The broom factory of Charles H. Harmon at St. Louis, Mo., was recently burned.

McMillen's elevator at Moose Jaw, Man., was struck by lightning Aug. 7 and burned.

The brewery of Jacob Lutz & Bro., at Grand Rapids, Wis., was burned July 23. Loss \$10,000.

An elevator at Plymouth, O., was burned July 5. The Hicks-Brown Mill Company of Mansfield owned it.

L. V. Hite's grain elevator and sawmill at Lebanon, Ill., was burned July 29. Loss \$3,500; no insurance.

The elevator and warehouse of J. Bryden & Co., Milwaukee, Wis., was recently damaged by fire. Loss \$1,500.

In the southern part of Polk county, Minn., 4,000 acres of standing grain were destroyed by a hailstorm Aug. 6.

An elevator at Latham, Ill., in process of erection for Wood & Comb, was demolished by a windstorm on the afternoon of Aug. 10.

Smith & Daley's elevator and mill at Sturgeon Bay, Wis., was burned July 15, together with 6,000 bushels of grain. Loss \$35,000; partially insured.

Fire destroyed 3,000 bushels corn, several hundred bushels oats and seventy five tons of hay stored in E. H. Hoes' barn at Marshalltown, Ia., recently.

A tornado blew off the cupola of the new Wells Elevator at Buffalo, N. Y., on the evening of Aug. 9. The building was not yet completed. Loss \$2,000.

The hay warehouses at Maquoketa, Ia., owned by Mr. Griffins, were struck by lightning and burned July 21. Fifty tons of hay were destroyed. Loss \$3,000.

The grain warehouse of Wm Bondies & Co. at Dallas, Tex., containing 3,600 tons of new hay, was burned on the afternoon of July 24. Loss \$20,000; partially insured.

Maran & Brosseau, dealers in grain and hay at Montreal, Que., recently suffered a loss of \$15,000 by the burning of their establishment, which was insured for \$22,700.

The malt house of Everard's brewery at New York City has been visited by three fires in a month's time, each caused by a spark from the malt mills. The last fire occurred July 31 and did \$20,000 damage.

A warehouse at Moorehead, Minn., owned by W. H. Davy & Co., grain dealers, collapsed recently under a heavy load of grain and hardware. The supporting timbers in the foundation were old and probably rotten.

A lad 5 years old entered Stafford & Smith's grain elevator at Albany, Ind., July 13, went upstairs and climbed into a bin filled with new wheat, which was being spouted into a car. He was drawn into the chute and smothered.

The Fargo Improvement Company's elevator at Fargo, N. D., operated by Morton & Co., was burned at midnight July 18. Tramps had built a fire underneath the platform to cook their supper, and fire was communicated to the elevator.

While at work on the Middle Division elevator at Harvey, near Chicago, Ill., Aug. 1, William Bolton fell from a scaffold to the ground, a distance of 95 feet, and broke his thigh bone, six ribs and his jaw. He died at the county hospital.

The grain elevator and roller mill at Alvarado, Tex., was burned between 2 and 3 a. m. July 7. B. F. Coffman of Dallas had purchased the establishment three weeks before and was making improvements. Loss \$35,000; insurance \$25,000.

Nelson Bros.' grain elevator at Lexington, Ky., was almost destroyed by fire at 9 p. m. July 30. The flames were extinguished after the engine house had been consumed, the elevator and its contents, 50,000 bushels

wheat, being little damaged. Loss \$4,000; insured. The fire was started by negroes, who wished to revenge themselves on the elevator owners.

Burglars forced their way into the office of Byrnes & Lewis, grain dealers at Lexington, Ky., at night July 15. They attempted to bore a hole in the safe, but the drill broke off and they desisted. The only loss sustained was the damage to the safe.

H. B. Marksbury's granary at Lancaster, Ky., was burned July 29. W. H. Kinnaird owned the building, valued at \$4,600. The wheat stored in the house was valued at \$9,000; fully insured. Insurance on building \$3,000. The fire is believed to have been the work of incendiaries who had been stealing grain.

THE EXCHANGES

The Montreal Board of Trade contemplates erecting a building to cost \$500,000.

The Minneapolis Chamber of Commerce has followed the example of other exchanges, and will adjourn on Saturdays at noon.

A grain cleaning house will be established by the Minneapolis Chamber of Commerce. The committee appointed to draft a plan has recommended that the system followed in Chicago be adopted.

The Winnipeg Board of Trade recently elected for the ensuing year the following grain examiners: S. Spink, N. Bawlf, F. W. Thompson, S. A. McGraw and Wm. Martin. Flour and meal examiners, S. Na'rn, D. H. McMillan, S. Spink, F. W. Thompson and James Anderson.

A hay exchange is being organized at Kansas City, Mo. The hay dealers met Aug. 5 and appointed a committee to draft a constitution and by laws. The object in forming an exchange is to increase the trade in the large hay crop in the Southwest and to mutually protect the interests of members. It is hoped that a hay dealers' convention may be held in Kansas City in November.

Gain committees were elected by the Baltimore Corn and Flour Exchange July 13 as follows: Wheat committee, James R. Clark, George C. Hilt and Alexander J. Godby; corn committee, John B. Phillips, A. H. Sibley and W. M. Hazlegrove; oats committee, George A. Hax; rye committee, Joseph Tate; barley committee, Fred H. Gottlieb. These gentlemen were all unanimously re-elected to serve three years from date.

Business on the Chicago Board of Trade was suddenly interrupted on July 22. Henry Atkins, an Englishman, forced his way past the doorkeeper and strode up to Thomas E. Wells of Kirkwood & Co., commission merchants, saying, "I want to talk with you." Wells referred him to his attorney. Atkins drew a revolver and shot three bullets into the ceiling. The operators tumbled over one another in attempting to get out of range, but the doorkeeper took the weapon away from the Englishman, and after the angry brokers had cooled off he was handed over to the police. Atkins speculated through Kirkman & Co. and lost all he had, and was in debt \$4,000 besides. The courts decided against him in different suits, and he took the above method of settling his supposed wrongs.

The Eastern man is much with machinery, and always has an eye out for whatever he can turn to good advantage in his business, and is willing to experiment. New York parties have been buying wild marsh hay at Jefferson, Wis., and will experiment with it for the manufacture of a cheap but superior article of binding twine.

There are indications that the first rush of winter wheat is nearly past, and that the movement will be more even hereafter. The first demands for money to meet current expenses are at least partially satisfied. The next overflow may be looked for when the spring crop starts; then an even flow for the year to follow. All that are able will most likely hold back a large share of the crop until later in the season. But there need be no fear of a lack of supply at present.—*Market Record*.

The much talked of exporting of Texas grain to foreign countries has commenced in real earnest with the loading of the British steamship Etherley. The steamer is chartered by Messrs. J. Moller & Co., for account of the Export Grain Company, composed of the Texas Star Flour Mills and Messrs. Robert Bornfeldt and D. C. Imboden, and will take about 80,000 bushels of wheat, clearing for Cork, where she will call for orders as to the port of final destination.—*Galveston News*.

The possibilities of the Texas Panhandle for wheat growing, that it is claimed may, with the necessary efforts produce 65,000,000 bushels of wheat, is a revelation to people who dropped into the notion that the limit of production had been reached. That part of Texas this season has turned out several million bushels, and Texas wheat has begun to go out as export grain. All that seems to be needed to increase the cultivation is stimulating prices, and these easily increase the area in old countries or new.

WATERWAYS

The cry now is for an enlargement of the Erie Canal to give lake vessels an outlet to the ocean.

The steamer Parnell was reported short 78 bushels on its arrival at Buffalo with a cargo of grain from Toledo.

The first vessel to pass through the Welland Canal and navigate the ocean was the E. S. Adams in 1858, owned by Morris & Neelon.

About \$200,000 has so far been subscribed by citizens of San Francisco for the stock of the Nicaragua Canal Construction Company.

After a strike of three weeks' duration the stevedores, who were employed in unloading the line steamers at Chicago, returned to work.

The largest wheat cargo ever shipped from Toledo was recently taken out by the steamer Gilcher. It amounted to 100,000 bushels, or 3,000 tons.

The exports of Baltimore in 1891 included 109,729 tons corn, 100,553 tons wheat, 206,568 tons flour, 4,244 tons clover seed and 1,049 tons timothy seed.

A bad break occurred in the Erie Canal recently, obstructing traffic three weeks. Van Styck's aqueduct, five miles west of Schenectady, was carried away.

The steel steamer Charles W. Wetmore arrived at Liverpool July 21, having left Duluth, Minn., June 11. Her cargo of 95,000 bushels wheat was found to be in good condition.

The Secretary of War has been notified that there are no legal objections to the purchase of the Portage Lake Canal by the government, so that there need be no further delay in taking charge.

The receipts of new wheat in Buffalo have been very heavy of late, resulting in a blockade at the New York Central and Erie elevators. Vessel owners complain at the delay experienced in unloading.

The San Francisco Chamber of Commerce, in a pamphlet issued recently, states that the city has suffered a loss of 40 per cent in its trade during the past few years by diversion to points north and south.

It is said that Col. S. C. Reynolds, the Toledo grain dealer, has succeeded in organizing an English company with \$2,500,000 capital to operate a line of steamers between Lake Erie ports and Liverpool.

The people of California would have the government improve the San Joaquin and Sacramento rivers. A commission is now investigating mining methods in Placer county, and their effect on navigation.

The first large exportation of this season's wheat crop at Baltimore was made July 23, when the British steamship Millfried loaded a cargo of 96,000 bushels wheat and 17,000 bushels corn, for Tyne, England.

The Chesapeake & Ohio Canal has been repaired, and is now being navigated for the first time since the disastrous flood of May, 1889. Four miles of it, known as the "Georgetown level," were rebuilt after the flood by the millers of West Washington.

Lake freight rates recently took an upward turn, resulting from a brisk demand for vessel room for grain bound east. Considerable grain is being exported via Montreal. The boom in rates is very satisfactory to vessel men after the depression in the spring.

A committee is investigating the advisability of constructing canals between the Tennessee and Cumberland rivers and the Tennessee and Mississippi rivers. By means of the proposed canals river boats could save 1,000 miles in the trip between points on the Tennessee or Cumberland and the Lower Mississippi.

The Government Board of Engineers has reported on the Canal street bridge over the south branch of the Chicago River, and the municipal authorities may expect an order from the Secretary of War directing its removal at once. It greatly interferes with traffic on the south branch, where many of the elevators are located.

The enthusiasts who believe that the construction of the Nicaragua Canal will foster and increase the ocean commerce of San Francisco and other Pacific Coast ports are too wild in their statements. That the trade of ports in California will be benefited is certain, but some of the foreign commerce conducted via those ports will avoid the long rail haul to and from the interior of the country, and pass through the Gulf of Mexico and the Nicaragua Canal.

False statements have appeared in various journals relative to the trip of the whaleback steamer Wetmore to Liverpool with a cargo of wheat. It was not "the first cargo of grain shipped from the lakes without rehandling." Grain cargoes have been so shipped ever since the 60's. The Wetmore's cargo was rehandled before passing through the Welland Canal, the load being finally completed at Montreal. There is nothing remarkable about the trip of the whaleback. It costs as much now to ship grain to Liverpool as it did before. The fact is that laden vessels cannot ascend the St. Lawrence River, and the Wetmore will not come back to take another cargo

from the Great Lakes. That steamer was built for ocean traffic, and the builders at Duluth had to send it there, cargo or no cargo.

Another reservoir will be created at the headwaters of the Mississippi River by the construction of the Sandy Lake dam, which is to cost \$50,000. The reservoirs have increased the depth of water as far as 425 miles below Grand Rapids. It is deemed practicable to expend \$1,500,000 on the Upper Mississippi the ensuing year.

The improvements and extensions of the harbor at Calais, France, having been completed, its facilities are now equal to those of Havre, Antwerp and Dunkirk. Exporters may therefore find it to their interest to ship cargoes to that port, where the total charges on wheat laden vessels entering and leaving are: Steamers 1s. 6d. per ton cargo; sailing vessels, 2s. 8d. per ton cargo; other grain in proportion. The local taxes are 4½d., while at Dunkirk they are 8d.

An increase in the traffic on the Mississippi may be expected in the near future. It will be the highway for the commerce between the interior of the United States and the countries south, which have recently been opened to trade through reciprocity treaties. Why should not large quantities of grain, flour, etc., be freighted by river boats to New Orleans, and there transhipped to ocean-going steamers. The railways cannot hope to meet the low rates of the river boats.

Those interested in the traffic of the Great Lakes will find the recent trip of the congressmen investigating the commerce of the lakes, to be a very good idea when the question of appropriations for the benefit of rivers and harbors comes up in the next Congress. Now that the legislators have their eyes opened to the magnitude of our lake commerce, they will probably not be niggardly in expenditures for its development. Many of the tourists expressed views favoring a more liberal policy.

The great importance of our waterways, even in this age of railways, is shown by the numerous large cities located on their shores. Besides St. Louis, Cincinnati and Pittsburgh, there are twenty-five other cities with over 50,000 inhabitants located on our rivers. On the great lakes we have Chicago, Cleveland, Buffalo, Duluth, Toledo, Detroit and Milwaukee. The seacoast cities, headed by New York, Philadelphia and Baltimore, are sixteen in number including all with over 50,000 inhabitants.

The Pan-American Transportation Company has been incorporated under the laws of Alabama with \$10,000,000 capital stock. The officers are: J. B. Clarke of Chicago, president; H. C. Ruttan of Chicago, vice president; F. L. Dana of Galveston, secretary, and Dr. W. O. Kulp of Galveston, treasurer. The directors are A. P. Chamberlain, Des Moines; A. Gray, Chicago; Howell Jones, Topeka, Kan.; Gaylord Clark, Mobile, Ala.; A. S. Ben, Galveston. The company will have its general offices at Chicago. A fleet of steel steamers will be built to run from Galveston, Tex., New Orleans, La., Mobile, Ala., and Tampa, Fla. The company expects to receive a portion of the steamship subsidy voted by Congress, and the large trade resulting from the reciprocity agreement recently entered into between Spain and the United States.

OBITUARY

L. E. Briggs of Briggs & Co., grain dealers at Taunton, Mass., is dead.

D. Glauber of Glauber & Isaac, dealers in grain, hay and groceries at Brunswick, Ga., is dead.

Amos R. Clark, an old member of the New York Produce Exchange and of the firm Horton, Clark & Mangels, died at North Tarrytown July 26 in the 68th year of his age.

J. S. Blackman died at New York July 24, aged 72 years, after having been sick nearly two years. He was formerly engaged in the grain business at New Orleans and at New York, but recently ill health compelled him to retire. His death is a sad loss to his son, J. J. Blackman, a highly respected member of the New York Produce Exchange, who has been engaged in the grain trade in New York for many years.

The yards at Baltimore are so blocked with freight that the Fort Wayne and Panhandle roads have given notice that they, until further advised, cannot accept shipments of grain consigned to that point. They should erect storage elevators.

The acreage of clover is returned as practically the same as that of the previous year, the increase amounting to less than one-third of 1 per cent. Increased breadth in a large section of the West has been offset by a decrease in the Eastern and Atlantic states, where the new seeding hardly equalled the old sod turned over, and some spring planting did not properly develop on account of drought and cool weather. The increased acreage of clover in the Rocky Mountain region, which has been made prominent by the returns of recent years, is largely due to the rapid extension of the use of alfalfa as a forage plant. It has been found most admirably adapted to the semi-arid districts, and is now an important item in most districts where cultivation is carried on by means of irrigation.

PRESS COMMENT.

HARD ON THE BEARS.

Speculators with bearish tendencies have been having a hard time of it. They have not been able to get up a drought scare, or to make the people believe that the crops were drowned out by too much rain, or even persuaded the public that the grasshoppers were eating us out of house and home. There were a few grasshoppers out in Colorado, but it is plain that they weren't well drilled, for they didn't march through several counties a day, as they did some years ago.—*Farm Machinery.*

COMPROMISED WITHOUT GAINING.

The grain handlers of Kansas City are already beginning to have trouble with the railroads, which their committee, headed by the good-natured Mr. Simonds, so generously compromised with just before the Inter-State Commerce Commission was to take up their case. The expressed purpose of some of the lines to limit the period of reconsignment of grain to ninety days would unquestionably work injury to this market. All the grain men ask is fair treatment, but it looks as though they were not likely to get it.—*Implement and Farm Journal.*

CHICAGO INSPECTION OF GRAIN.

The farmer has begun his annual complaint against the Chicago inspection, charging that wheat is being undergraded, etc. This is one of the sins of the commercial calendar that cannot be charged against Chicago, for its inspection is notoriously rigid and honest. Chicago is a poor place for a farmer to send his chaff and screenings to, and whenever he kicks against Chicago inspection he writes himself down a knave. The farmer may take his share of whatever of commercial dishonesty that exists. Possibly he is no worse than the human average—but he is no better.—*Millstone.*

HOLDING BACK WHEAT.

Few people of any experience believe there will be any other important result from keeping the grain out of the market this season, than to carry the movement more evenly through the year. Europe requires about 1,400,000,000 bushels of wheat annually. Enough is raised there this year to last some ten months, and that continent will carry in stocks of wheat and flour enough from the last crop to last some sixty days more. But that would leave them bare at the beginning of another crop year. It is possible for Europe to pull through without buying much of our wheat when we charge an extraordinarily large price for it. Our surplus might be a serious matter if we get prices above an export basis and hold them there, whether it were done through farmer combinations or any other combinations. People have an aggravating way of getting along with less of a thing when combinations try to force them to pay more than they think they ought to.—*Minneapolis Market Record.*

THE GRAIN SPECULATOR IDLE.

When the handler of cash wheat is the most active, the wheat speculator is likely to be laying low. That's the case at this moment. The grain grower, with the aid of the grain receiver and the grain shipper, is now marketing the biggest crop he ever harvested. The speculator is simply watching the operation. At the present he has no office to perform. Months ago on the first intimation of crop failure abroad, he operated for an advance. When that had gone to considerable length he operated for a reaction. In both cases he performed his proper function and anticipated important circumstances, and eased up their effects. The speculator is really always trying to bring about an equilibrium. He doesn't half the time know it. That, none the less, is his part. He is now evidently in doubt. He is watching the cash market. If the farmer and receiver and shipper find it a very easy matter to sell, prices will move up. The speculator will then, more quickly than any other, take the bull side. If the new wheat does not sell easily, he will be quick to see that. At this juncture the speculator is not an anticipator.—*Chicago Herald.*

THE INVESTIGATION OF DULUTH ELEVATORS.

We have never favored, and do not now wish to be understood as favoring, dishonest or tricky means to apparently prove a state of facts which does not exist. If, as is alleged, the elevator people at Duluth have been guilty of crookedness, let them be thoroughly exposed and condemned. Unfortunately for the farmer, he has always had attached to him a class of demagogues who are not particular as to their statements, provided that loaves and fishes come their way. There is also the credulous crank ready to believe that everything which he does not understand is "crooked," and that everybody, excepting himself and his class, are dishonest. These will claim, and are claiming, at this point in the investigation, that great matters have been shown and that much has been proved. As a matter of fact the only thing clearly established is that about \$6,000 of the people's money has been spent and that, as yet at least, no particle of wrong has been shown to have been perpetrated. The schedules of Olsen

et al. have been thrown out as wholly unreliable and untrue, and the only sign of a combine is in the testimony of a creature who admits that he was engaged in illegal and disreputable practices, and whose entire fabric of alleged "damaging testimony" is woven from conversations with a boy wherein the witness admits that, so far as himself was concerned, said conversations were largely lies.—*The Northwestern Farmer.*

STRICT GRADING.

An Indianapolis writer says: "The wheat grade standards are very strict in Chicago, St. Louis, Toledo and New York, and this fact causes farmers to sometimes believe that they are being imposed upon." If the grading is strict and as uniform as practicable, it is obvious that the farmer is not in fact injured thereby, for the same grading which regulates the selling by farmers in the Chicago market governs the sales in that market to millers and exporters, and the merit of the wheat in quality thus sold finds recognition in the better price which it naturally receives than if the same classification were applied to a lower quality. These matters equalize and adjust themselves.—*Cincinnati Price Current.*

Miscellaneous * Notices*

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I have for sale in good order: One Clutch; one No. O Band one No. G Nonpareil Feed Mills; one No. 2 Magic Feed Mill; one No. New 4½ Scientific Feed Mill; one No. 2 Morgan Scourer; two 5 ft. by 32 in. and one double 6 ft. 6 in. by 30 in. hexagon scalping reels, etc. Address
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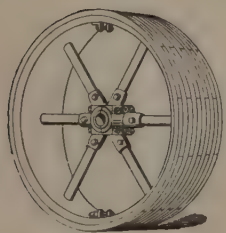
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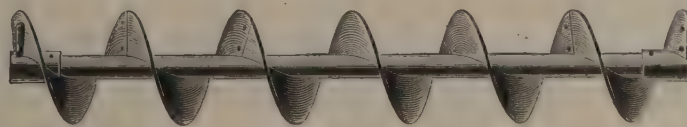


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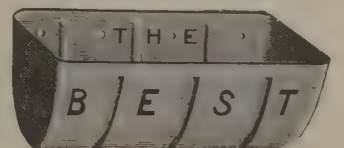
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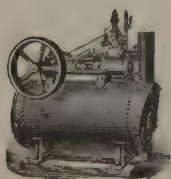
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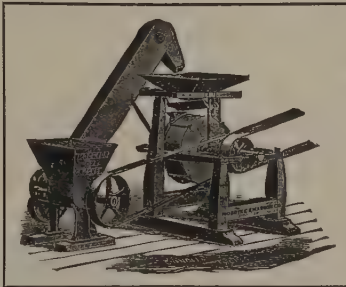
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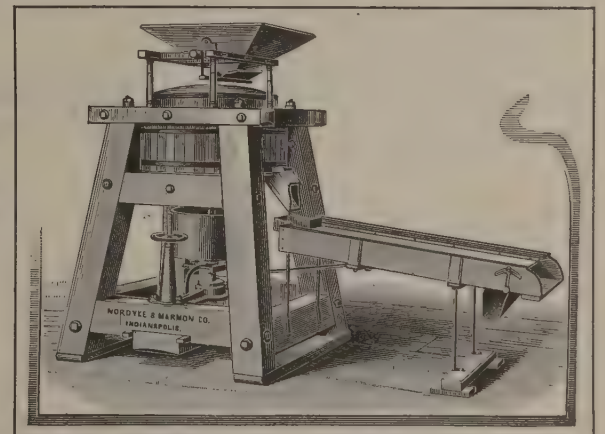
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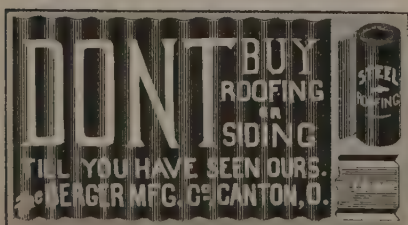
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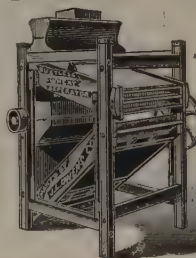
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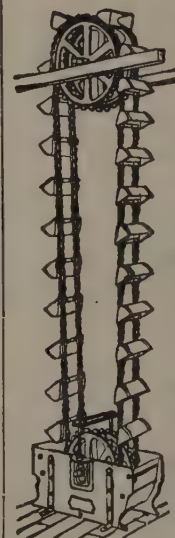
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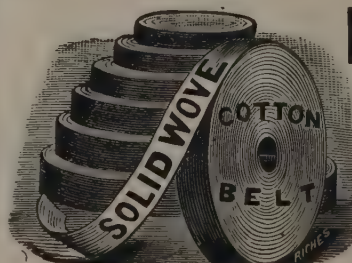
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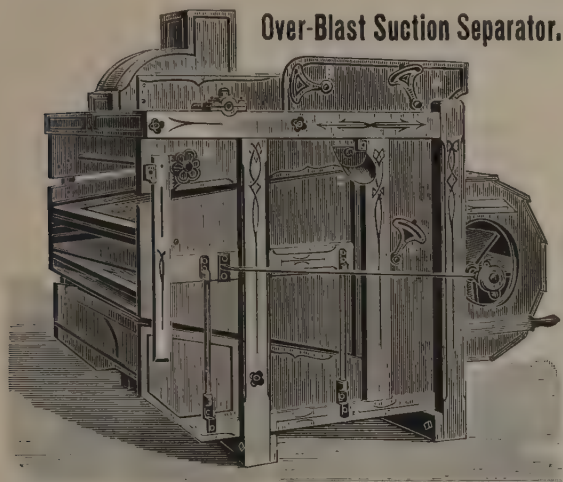
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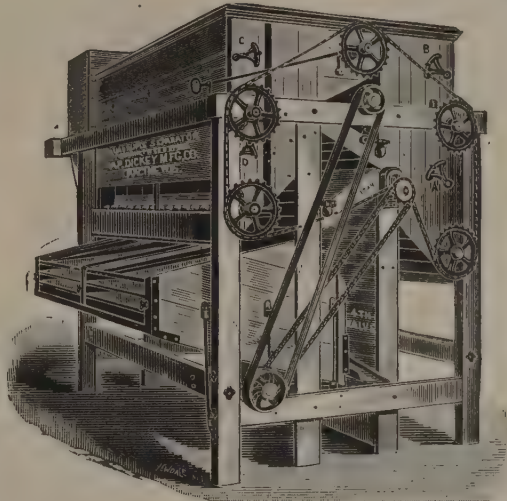
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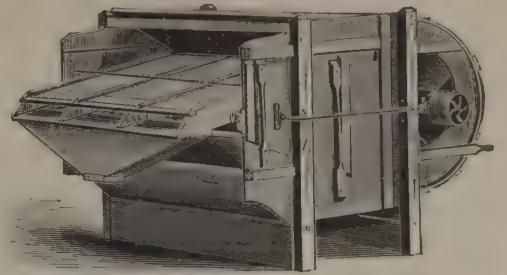
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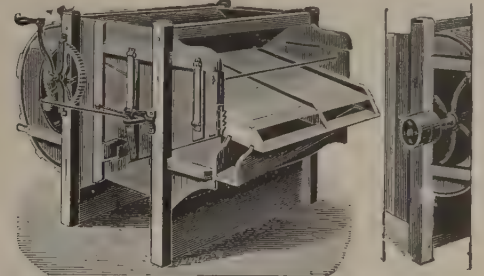
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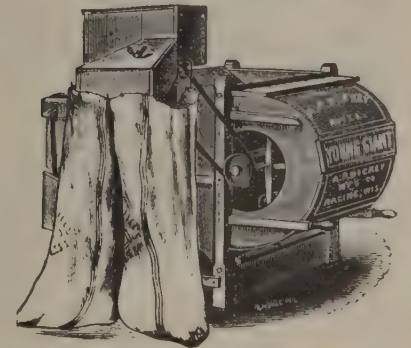
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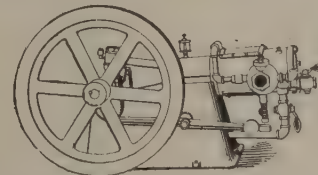
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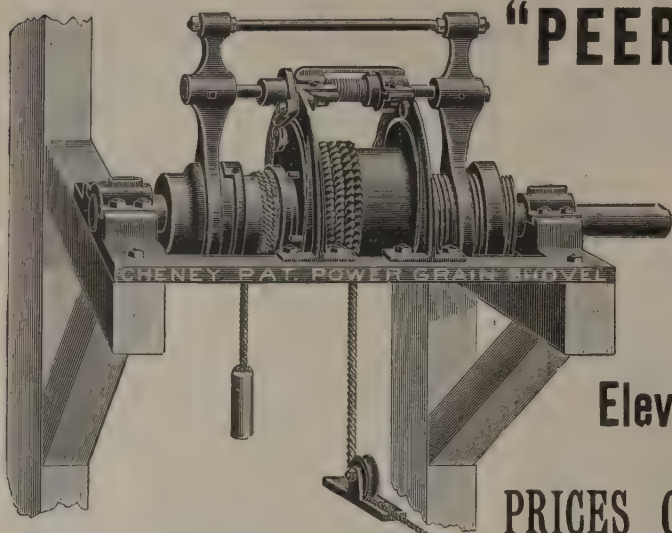
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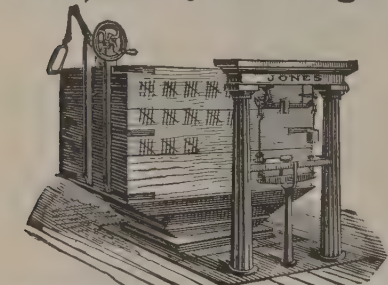
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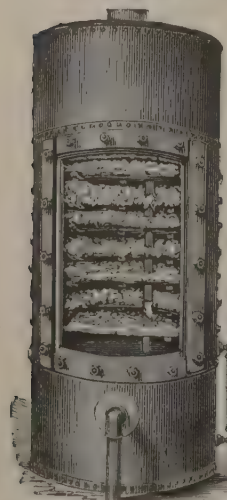
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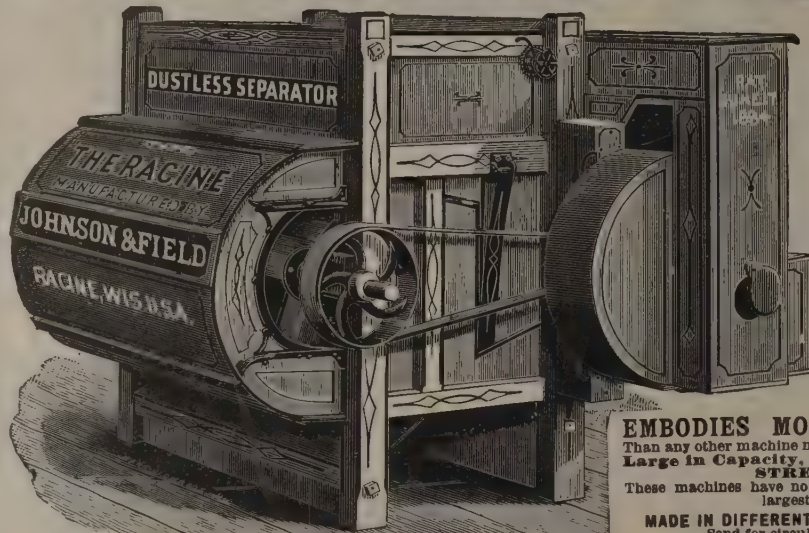
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DEAR SIR:—In March, 1889, I purchased from you three of your Automatic Scales, one No. 4 and one No. 6 grain, and one feed scale. These have been in constant use since that time, and work as accurately now as they did the day we set them up. As yet they show no signs of wear. We are well pleased with the scales, and can recommend them as accurate and durable.

Yours truly, **WILLIAM BLODGETT.**

GRAND RAPIDS, MICH., Feb. 28, 1891.

J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—The Automatic Grain Scale, that you sent us, more than meets our expectations as a scale. We are using it for the purpose of weighing beans from cars. We have weighed something like 40,000 bu. in the past three months, and have yet to find the time when it did not do its work correctly.

Its being automatic makes its own register, requires no attention whatever, and we cheerfully recommend it to the public as the scale for warehouses and elevators.

Very respectfully,
W. T. LAMOREAUX & CO.

DELAWARE, ILL., March 7, 1891.

MR. J. B. DUTTON, Detroit, Mich.

DEAR SIR:—We have been running one of your Automatic Grain Scales for the past 6 months and find they work and weigh grain correctly. We weigh the grain from the stock hopper to the rolls, thereby enabling us to know how much cleaned wheat it takes for a barrel of flour. We can recommend them to all millers.

Yours truly, **F. STARZ & SON.**

SAGINAW, MICH., March 6, 1891.

J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—Replying to yours of the 4th will say that the Automatic Grain Scale we bought of you has been in almost constant use for over a year, and we find by frequent tests that they are very correct and reliable in ascertaining the amount of wheat ground each day.

Yours truly, **BRAND & HARDIN.**

DULUTH, MINN., March 20, 1891.

J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—Replying to yours of the 18th, regarding your Automatic Scales, will say, that we have been using them in our mills and they have given perfect satisfaction.

We have made frequent thorough tests, and find that they are very accurate in weighing.

Respectfully yours, **GILL & WRIGHT.****ELDERED MILLING CO.,**

JACKSON, MICH., April 3, 1889.

J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—Replying to your favor of the 2d regarding your Automatic Scales which we are using on feed in our mills, am pleased to say that they are entirely satisfactory in every respect. We have tested them a great many times and find that they weigh very correctly. In matters of yields and percentages they are indispensable.

Wishing you every success with them, we are,

Yours truly, **ELDERED MILLING CO.**

WALLA WALLA, WASH., March 9, 1891.

J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—Replying to your favor of March 4, will say, the new Automatic Scale you sent us last fall has since been in constant use, and works to our entire satisfaction.

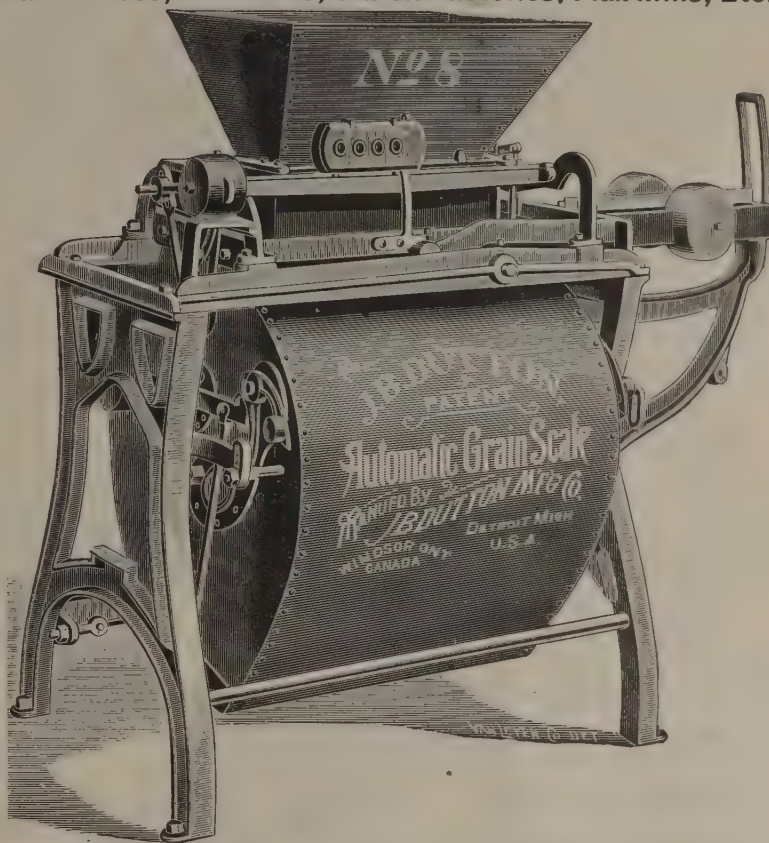
Yours truly, **H. P. ISAACS, Manager.****THE ISAAC HARTER CO.,**

FOSTORIA, OHIO, June 19, 1889.

J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—The new register you sent us at the beginning of the year has been in constant use and works to our entire satisfaction.

As regards another testimonial can only say that your Automatic Scale has been in operation in our mill for over a year, weighing all the feed we made during that time. Its correctness is no longer a question of doubt with us, having tested it both by grinding out all the wheat on hand, and by taking frequent drafts which, on Fairbanks or Howe Scales, show 100 pounds to each dump, the regular weight of each discharge from your No. 5 scale.

Yours truly,
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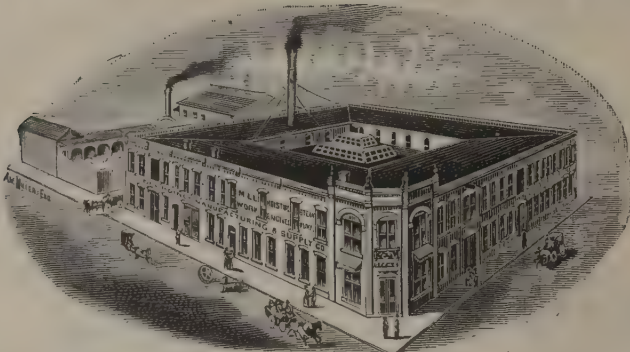
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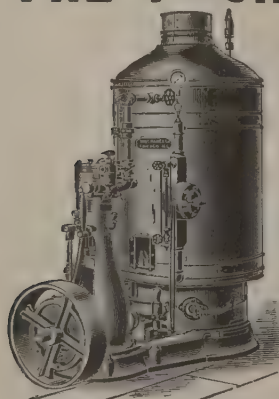
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THE BEST & CHEAPEST

BELTING

IN THE WORLD

STITCHED CANVAS BELTING

MANUFACTURED BY
THE CHESAPEAKE BELTING CO.
BALTIMORE, MD.

M. F. SEELEY.

J. S. SEELEY.

C. R. DELAMATYR

THE SEELEY ELEVATOR.

SEELEY, SON & CO.

FREMONT, NEB.

ELEVATOR BUILDERS

THE SEELEY ELEVATOR

Stands at the head for Convenience and Economy of Operation.

You cannot build a first-class modern elevator without using some of our inventions, so you had better apply to us for plans and specifications and save royalties. A large number of persons are using our appliances and may expect us to call on them for royalties in the near future.

Also furnish all kinds of Machinery, Engines, Cleaners, Corn Shellers, Belts and Buckets, etc., etc.

We build Elevators in all parts of the United States and Canada.

With our experience, we can save you on these items more than cost of Plans. Correspond with us, and save costly mistakes.



SPECIAL FLAX CLEANING MACHINERY.

WE ARE MAKERS AND JOBBERS

OF ALL KINDS OF

MACHINERY and SUPPLIES

— FOR —

**GRAIN ELEVATORS,
MILLS,
MALT HOUSES,
BREWRIES,
AND DISTILLERIES,**

SUCH AS

SHAFTING, PULLEYS, HANGERS,
PILLOW-BLOCKS, CLUTCHES, COUPLINGS,
GEARS, SPROCKETS, SET COLLARS,
TAKE-UP BOXES, CRANE-SPOUTS,
LEATHER, RUBBER, COTTON AND LINK BELTING.
"FLEXIBLE" AND "SWIVEL" GRAIN SPOUTS.
ELEVATOR BOOTS, BUCKETS AND BOLTS.
"SPIRAL" AND "BELT" CONVEYORS.
"PLATFORM," "DUMP" AND "HOPPER" SCALES.
GRAIN SCOOPS, AND POWER GRAIN SHOVELS,
— ALL SIZES OF —

FARM AND WAREHOUSE FANNING MILLS.

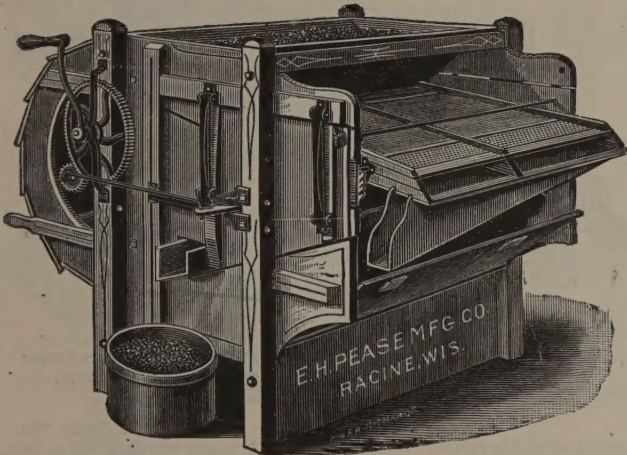
GRAIN TESTERS, SEED TESTERS,
PERFORATED METALS, WIRE CLOTH,

Power Car Pullers, Oat Clippers, Dustless Receiving Separators,

POLISHERS, SEPARATORS, GRADERS,
FLAX REELS AND SPECIAL FLAX MILLS,
"OVERHEAD," "SWEEP" AND "TREAD" HORSE POWERS.
BAG-TRUCKS, SIX-WHEEL WAREHOUSE TRUCKS.

— AND —

PEASE SPECIAL FLAX MILLS



FOR HAND USE OR POWER.

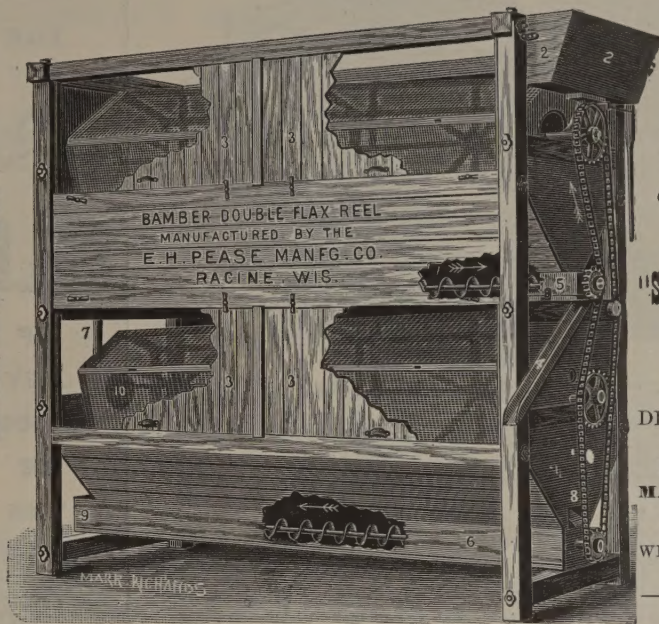
This Mill is represented with a Grain Hurdle in the Shoe, to show that although especially adapted to Flaxseed Cleaning, it can also be used for all kinds of Grain, making it a universal mill, calculated for all kinds of work. This mill is built upon the same principle as our Side Shake Warehouse Mills, but with more depth of the shoe, in order to accommodate deeper Sieves and a flax screen extending to the extreme front of the mill, a length of four feet. It consequently has greater capacity than any ordinary mill in existence. No flax hurdles are used, as separate sieves work better on flaxseed, and afford opportunities for changing the combinations for different classes of work. This mill is equally well adapted to cleaning, separating and screening Timothy, Clover, and other fine seeds.

Note—The No. 0 and No. 00 machines are not fitted to run by hand power.

	No. 2.	No. 1.	No. 0.	No. 00.
Extreme Height.	3 ft. 8 in.	3 ft. 8 in.	3 ft. 8 in.	3 ft. 8 in.
Size over all....	5 ft. 7 in. x 4 ft.	5 ft. 7 in. x 4 ft.	5 ft. 7 in. x 5 ft.	5 ft. 7 in. x 6 ft.
Flt. cen. of pulley	27 in.	27 in.	27 in.	27 in.
Driving pulleys..	6 in. x 2 in.	6 in. x 2 in.	6 in. x 3 in.	6 in. x 3 in.
Rev. per minute.	275	275	275	275
Size of Sieves..	3 ft. 2 in. x 33 in.	4 ft. x 33 in.	5 ft. x 33 in.	6 ft. x 33 in.
Depth of Screw..	4 ft.	4 ft.	4 ft.	4 ft.
Capacity per h'r.	25 to 35 bu.	35 to 45 bu.	45 to 60 bu.	60 to 75 bu.

IN USE BY ALL THE
PRINCIPAL FLAX HANDLERS
OF THE UNITED STATES.

STRAIGHT OR TAPERED
HAND REELS OF ANY DIMENSIONS
DESIRED, MADE TO ORDER.



MADE
WITH
ONE,
TWO OR
FOUR
REELS
IN A
CHEST
AND
with or without
"SCALPING-SHOE"
REELS
OF ANY
DESIRED STYLE
OR
DIMENSIONS
MADE TO ORDER
WRITE FOR
PARTICULARS.

Two feet of capacity length for each lineal foot of machine.

Tapered, Hexagon Reels, Revolving on Horizontal Shafts.

All Sprocket Wheels and Drive Chain run perpendicular and Parallel with each other.

The lightest running, best made, most durable reels in the market.

THESE REELING MACHINES

ARE ADOPTED AND IN USE BY SUCH

WELL-KNOWN HOUSES

— AS —

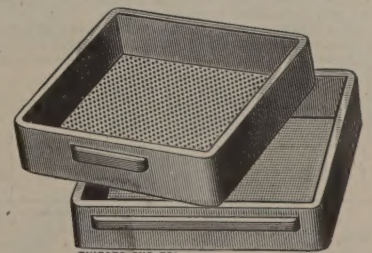
The Albert Dickinson Seed Co., Chicago.
The Minnesota Elevator Co., Chicago.
W. L. Luce, South Elmhurst (Chicago), Ill., and Minneapolis, Minn.
Cargill Bros., La Crosse, Wis.
McMichael & Son, McGregor, Iowa.
Winona Mill Co., Winona and Mankato, Minn.
Inter-State Grain Co., Minneapolis, Minn., and Olwein, Iowa.
Samuelson & Co., Stromsburg, Neb.
Stokes Bros., Watertown, So. Dakota.
Ness & Moen, Peterson, Minn.
J. C. Sanborn & Son, Ortonville, Minn.
D. C. Fairbanks, Dodge Center, Minn.
Clark Bros., Manson, Iowa.
Boor & Benjamin, Ashton, Iowa.
S. J. Clausen, Clear Lake, Iowa.
I. N. Drake, Hartley, Iowa.
AND MANY OTHERS.

SEND FOR CATALOGUE.

ADDRESS ALL LETTERS

CAREFULLY

—TO—



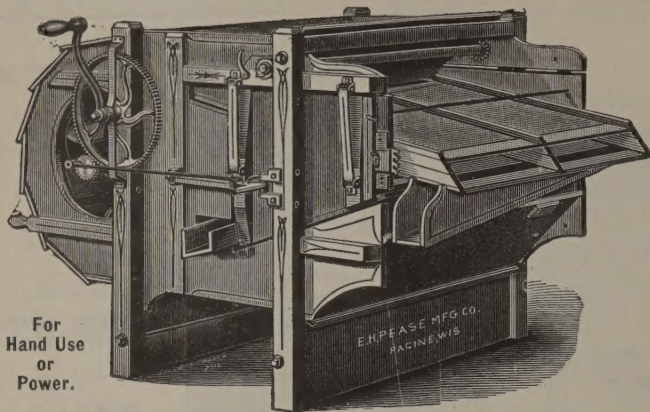
GRAIN AND SEED TESTER.

The upper box fits into the lower one. The zinc or wire cloth, as the case may be, are of different perforations, or meshes, according to the work required to do. When ordering, simply state what the Testers are to be used for, whether for grain or for fine seeds, and what kind, as separate Testers are required for each. A Tester includes a pair (both sieves).

E. H. PEASE MFG. CO., RACINE, WIS., U. S. A.

SEE PAGES 66, 67 AND SECOND COVER PAGE.

PEASE WAREHOUSE FANNING MILLS.



The "Pease" Side Shake Mills.

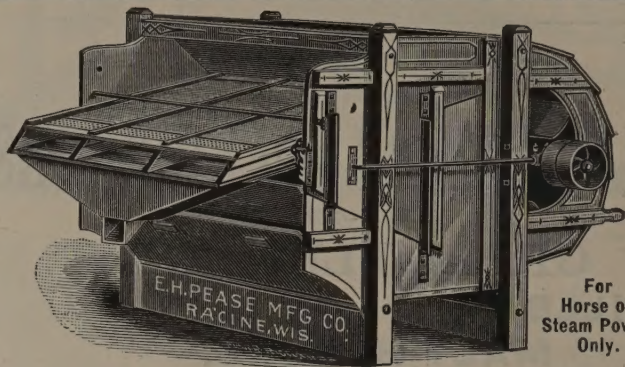
The Cut shows the "Right," or Crank side. On the opposite side are tight and loose Pulleys. These mills are not only a first-class mill for general work but are also specially adapted for all kinds of seed cleaning as is attested by the following unsolicited letter, which we publish by permission:

St. CHARLES, MINN., April 12, 1890.
E. H. PEASE MFG. CO., Racine, Wis.:
Gentlemen:—We have started the No. 2 Mill which we bought from you a short time ago. We find it to be the best Timothy Cleaner we ever saw. It cleans very fast and does fine work. It is far ahead of the mill for cleaning timothy. We also use a — mill but it does not come up with the No. 2 side shake we bought of you. Your No. 2 will clean timothy about three times as fast as the — mill does and does better work than the — does. Your mill is well built and strong. We would not give our No. 2 "Pease" Side Shake for any two — that we ever saw.
Very truly,
J. B. ZECHES & CO.

NOTE—The No. 0 machine is not fitted to run by hand power.

	No. 3.	No. 2.	No. 1.	No. 0.
Extreme Height.....	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.
Size over all	5 ft 2 in x 3 ft 4 in	5 ft. 2 in. x 4 ft.	5 ft 2 in x 4 ft 9 in	5 ft 2 in x 5 ft 9 in
Floor to center of pulley ..	25 1/2 in.	25 1/2 in.	25 1/2 in.	25 1/2 in.
Driving pulley	6 in. x 2 in.	6 in. x 2 in.	6 in. x 2 in.	6 in. x 3 in.
Revolutions per minute	275	275	275	275
Size of hurdles	2 ft. 6 in. x 24 in.	3 ft. 2 in. x 24 in.	4 ft. x 24 in.	5 ft. x 24 in.
Capacity per hour	100 to 200 bu.	125 to 200 bu.	175 to 350 bu.	250 to 450 bu.

HAVE
THE
LARGEST
SALES
OF
ANY
MADE
IN
THE
UNITED
STATES



The "Pease" End Shake Mills.

Particularly adapted for use in Horse Power Elevators where power is limited and close cleaning and grading desired. It is strong, durable and noiseless.

The shoe is supported by STEEL springs, hung from above and vibrated by flexible shake-rods with ADJUSTABLE ECCENTRICS. The shake is from front to back, instead of from side to side.

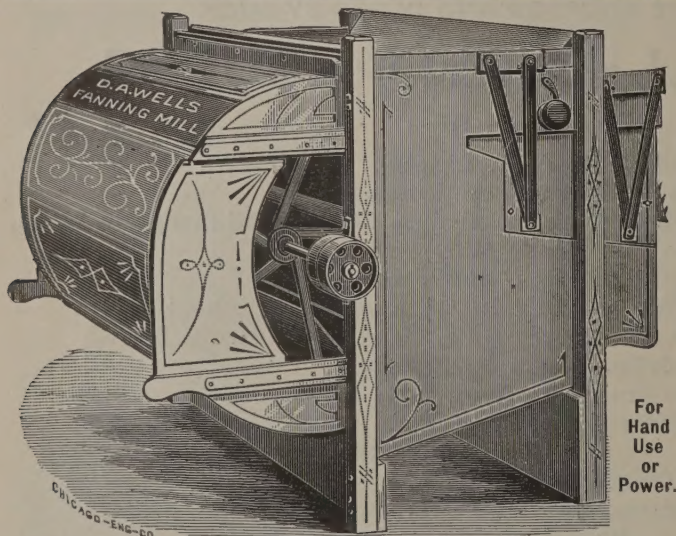
They are fitted with a patent adjustable hopper raiser, not shown in cut, which gives an even flow of grain upon the sieves.

These Mills have MUCH GREATER CAPACITY than any other kind of equal sizes. They are especially adapted for cleaning ALL KINDS OF GRAIN. The side shake Mills are better adapted for cleaning Clover, Timothy, Flax, etc.

NOTE—The pulleys are placed on the RIGHT side of mills or opposite to those showing in this cut, unless otherwise ordered.

	No. 3.	No. 2.	No. 1.	No. 0.	No. 00.
Extreme Height.....	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.
Size over all	5 ft 9 in x 3 ft 11 in	5 ft 9 in x 4 ft 8 in	5 ft 9 in x 4 ft 8 in	5 ft 9 in x 5 ft 8 in	5 ft 9 in x 5 ft 8 in
Floor to center of pulley..	25 1/2 in.	25 1/2 in.	25 1/2 in.	25 1/2 in.	25 1/2 in.
Driving pulleys.....	6 in. x 2 in.	6 in. x 2 in.	6 in. x 2 in.	6 in. x 3 in.	6 in. x 3 in.
Revolutions per minute...	450	450	430	450	430
Size of hurdle	2 ft. 6 in. x 30 in.	3 ft. 2 in. x 30 in.	4 ft. x 30 in.	5 ft. x 30 in.	6 ft. x 30 in.
Capacity per hour	125 to 250 bu	150 to 300 bu	200 to 400 bu	250 to 500 bu	300 to 600 bu

THESE MACHINES CAN BE FURNISHED WITH SPECIAL SIEVING TO HANDLE ANY KIND OF GRAIN OR SEEDS.



The "D. A. Wells" Warehouse Fanning Mill.

Designed for locations where power is limited and rapid cleaning is more of an object than close grading. They have a much larger capacity than our "Pease" Warehouse Mills, but having a larger fan, do not require as high a motion and consequently require less power.

These mills are famous as corn and oat cleaners, where plain elevator work is required, and to be done rapidly.

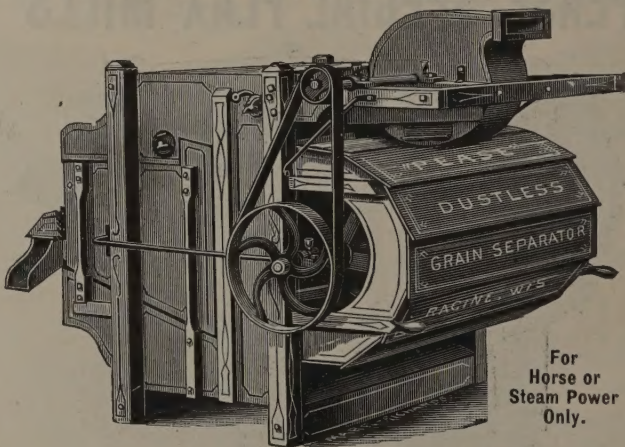
The sieves are so arranged that they may be put in place or taken out independently, thus enabling the operator to quickly arrange any combination that may be required for the various kinds or conditions of grain to be cleaned.

Extreme height.	Size over all.	Floor to center of pulley.	Driving pulleys.	Rev. per minute.	Size of sieves.	Capacity per hour on corn or oats.	Weight.
4 ft. 1 in.	5 ft 6 in x 2 ft. 8 in.	6 ft.	6 in x 2 in	140	37 in. x 26 in.	800 to 1,000 bu	425 lbs.

Office of
WM. DEACON.
E. H. PEASE MFG. CO., Racine, Wis.:
Gentlemen:—Replying to yours of recent date in which you inquire whether my old "D. W. Wells" Fanning Mill is not about worn out and if I will not require another one this season, would say:—The small piece of casting I ordered from you a few days ago to repair same, has put my mill in perfect order, with no reason in sight why it will not be running at the end of time and doing perfect work. This machine was in the Elevator when I took possession THREE years ago, and I am reliably informed has been in almost constant use here for FIFTEEN years previous to that time.
Very truly yours,
WM. DEACON.

WE
ARE
HEADQUARTERS
FOR
ALL KINDS
OF
MOTIVE POWER
MACHINERY,
FITTINGS,
SUPPLIES AND
REPAIRS
FOR
GRAIN
ELEVATORS
AND
MILLS.
—O—
SEND FOR
GENERAL
CATALOGUE
AND PRICES
—TO—

The "Pease" Dustless Separators.



CHICAGO, ILL., April 8, 1891.

GENTLEMEN:—The "Pease" Dustless Separator I bought of you March 26, 1891, I sold to Wittman & Co., 66 and 68 N. Halsted St. The No. 00 Machine I bought of you January 19, 1891, I sold to F. Grimsell, 80 W. Erie St., and one I bought of you some time ago I sold to Keifer Bros., North Ave. and Halsted St. These and several others of these "Pease" Dustless Separators I have bought of you are being used chiefly for cleaning corn and oats, and any of them will clean as fast as 8x5-inch buckets, placed 12 inches apart and running at the usual speed, can elevate.

All the machines are giving good satisfaction.

Yours, etc.,
R. D. HILDRETH, Millwright,
53 and 55 So. Jefferson St.

SPIRIT LAKE, IOWA, May 7, 1891.

GENTLEMEN:—Inclosed find draft to pay for the No. 00 "Pease" Dustless Separator just received from you to take the place of the Separator. Day before yesterday we put the mill in place and have been running it on some odd jobs, and the Separator works to our entire satisfaction. The Dustless Fan and Conductor works splendidly, carrying out everything I want it to, and I can put the suction on strong enough to take out grain if I desired. I can regulate the machine just as I want to, and am just more than pleased with it.
Yours truly,
D. L. RILEY.

	No. 3.	No. 2.	No. 1.	No. 0.	No. 00.
Extreme height.....	5 ft. 2 in.	5 ft. 2 in.	5 ft. 2 in.	5 ft. 3 in.	5 ft. 3 in.
Size over all	5 ft 9 in x 3 ft 10 in	5 ft 9 in x 4 ft 6 in	5 ft 9 in x 4 ft 6 in	5 ft 9 in x 5 ft 6 in	5 ft 9 in x 5 ft 6 in
Height to where grain enters	4 ft. 3 in.	4 ft. 3 in.	4 ft. 3 in.	4 ft. 3 in.	4 ft. 3 in.
Floor to center of pulley..	2 ft. 3 in.	2 ft. 3 in.	2 ft. 3 in.	2 ft. 3 in.	2 ft. 3 in.
Driving pulleys.....	6 in. x 3 in.	6 in. x 3 in.	6 in. x 3 in.	6 in. x 4 in.	6 in. x 4 in.
Rev. per minute	450	450	450	450	450
Size of hurdles	2 ft. 6 in. x 30 in.	3 ft. 2 in. x 30 in.	4 ft. x 30 in.	5 ft. x 30 in.	6 ft. x 30 in.
Capacity per hour	125 to 250 bu	150 to 300 bu	200 to 400 bu	250 to 400 bu	300 to 600 bu

E.H. PEASE MFG. CO., RACINE, WIS., U.S.A.

SEE PAGES 65, 67 AND SECOND COVER PAGE.

WE ARE HEADQUARTERS

For ALL kinds of MACHINERY AND SUPPLIES

—FOR— Grain Elevators and Mills,

SUCH AS
SHAFTING, PULLEYS, HANGERS,
PILLOW-BLOCKS, CLUTCHES, COUPLINGS,
GEARS, SPROCKETS, SET COLLARS,
TAKE-UP BOXES, CRANE-SPOUTS,
LEATHER, RUBBER, COTTON AND LINK BELTING,
"FLEXIBLE" AND "SWIVEL" GRAIN SPOUTS,
ELEVATOR BOOTS, BUCKETS AND BOLTS,
"SPIRAL" AND "BELT" CONVEYORS,
"PLATFORM," "DUMP" AND "HOPPER" SCALES,
GRAIN SCOOPS AND POWER GRAIN SHOVELS.

—ALL SIZES OF— Farm and Warehouse Fanning Mills, GRAIN TESTERS, SEED TESTERS, PERFORATED METALS, WIRE CLOTH, Power Car Pullers, Oat Clippers, Dustless Receiving Separators.

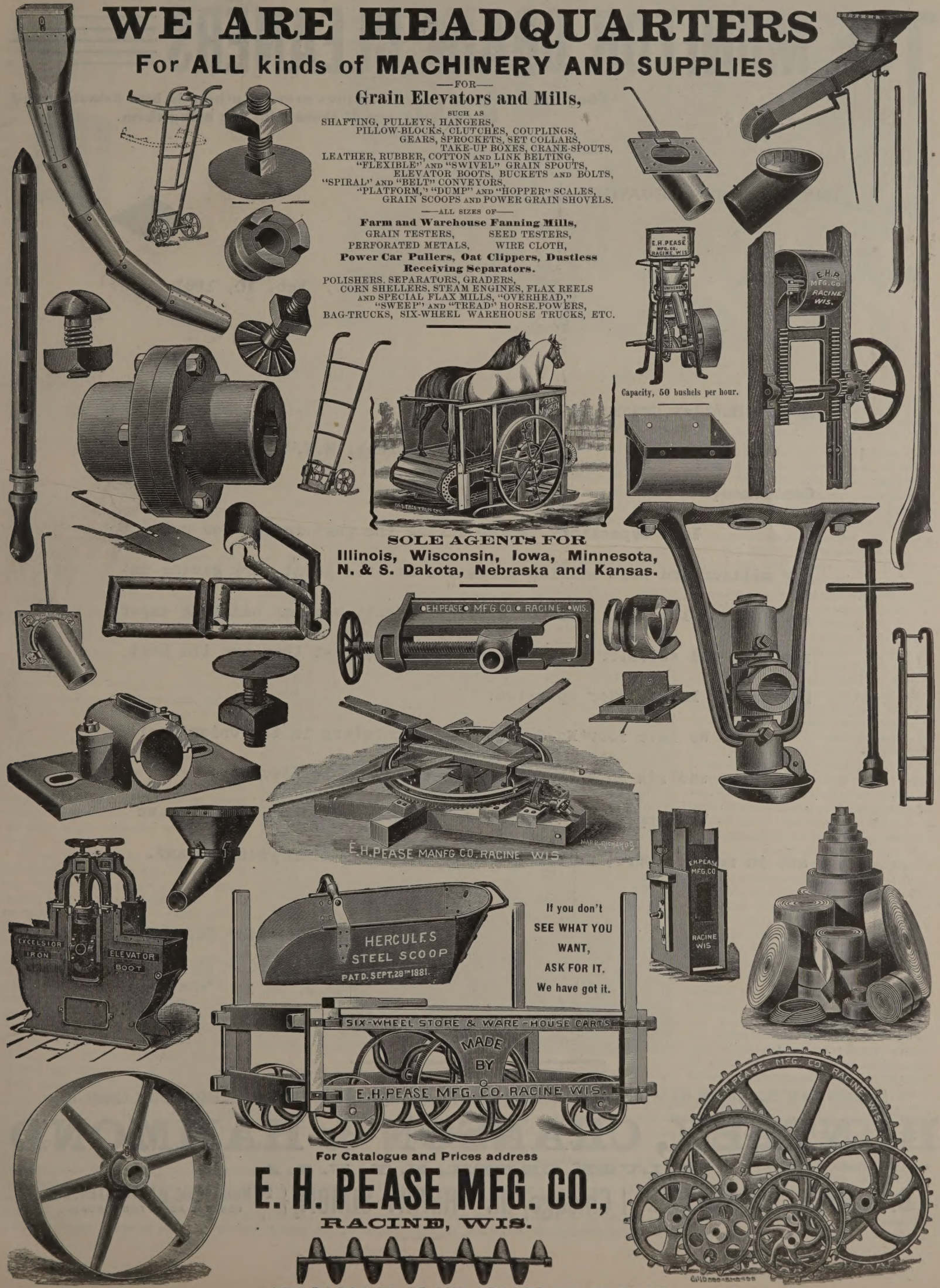
POLISHERS, SEPARATORS, GRADERS,
CORN SHELLERS, STEAM ENGINES, FLAX REELS
AND SPECIAL FLAX MILLS, "OVERHEAD,"
"SWEEP" AND "TREAD" HORSE-POWERS,
BAG-TRUCKS, SIX-WHEEL WAREHOUSE TRUCKS, ETC.



SOLE AGENTS FOR
Illinois, Wisconsin, Iowa, Minnesota,
N. & S. Dakota, Nebraska and Kansas.

SOLE AGENTS FOR

Illinois, Wisconsin, Iowa, Minnesota,
N. & S. Dakota, Nebraska and Kansas.



E. H. PEASE MFG CO. RACINE WIS

HERCULES
STEEL SCOOP
PAT. D. SEPT. 29 1881

If you don't
SEE WHAT YOU
WANT,
ASK FOR IT.
We have got it.

SIX-WHEEL STORE & WARE-HOUSE CARTS

MADE BY
E. H. PEASE MFG. CO. RACINE WIS.

For Catalogue and Prices address

E. H. PEASE MFG. CO.,
RACINE, WIS.

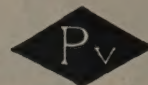
SEE PAGES 65, 66 AND SECOND COVER PAGE.

THE MONITOR GRAIN CLEANERS

The Superiority of these Machines over all others is best demonstrated
by the evidence of those who are using them.

✦ ✦ ✦

THE MIDLAND ELEVATOR CO.



DICTATED.

Kansas City, Mo., Feb. 10, 1891.

Messrs. Huntley, Cranson & Hammond,

Silver Creek, N.Y.

Gentlemen,-

Your Separators, which during the past summer you put into our million and half million elevators at this point, are giving excellent satisfaction, and our superintendent, who has had long experience in the elevator business, states to us that they are the best Separators he has ever operated.

We have four No.8 Warehouse Separators in the Union Pacific Elevator, and six No.8 Separators in the Santa Fe Elevator.

We simply add to this, as a recommendation, that when we are in need of more, we shall not look further than your Company.

Yours truly,

The Midland Elevator Co.

Chas. J. Rorty

Pres.

A complete line of these machines can be seen and full information obtained at our Western Branch, 63 and 65 South Canal Street, Chicago, Ill.

HUNTLEY, CRANSON & HAMMOND

Write for Circular, Prices, Etc.

SILVER CREEK, N. Y., U. S. A.

B. F. RYER, { 63-65 SOUTH CANAL ST. } Chicago, Ill. HENRY SIMON, { 20 Mount Street, MANCHESTER, ENG.,
Manager Western Branch. GENERAL AGENT FOR EUROPE.